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The Pennsylvania School Journal

DEVOTED TO

SCHOOL AND HOME

EDUCATION

J. P. WICKERSHAM, EDITOR.

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THE
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THE ALPHABET OF TECHNICAL EDUCATION.

BY GILBERT BUTLER.

IT is almost safe to say that the Keystone State will in a short time adopt some measures to introduce a system of technical education. It is a healthy sign when this subject receives the unqualified support of such gentlemen as Governor Hartranft, W. T. Hildrup, Esq., President of the Board of Directors for the Mechanics' High School, Chancellor Woods, Prof. J. P. Wickersham, and a host of others.

The question has been asked, "What shall the system be? As it is in France, in England, in Germany, in Switzerland, in Russia, or in Belgium?" It is evident that our system will be none of the above. To all who have watched the initiation and development of great movements, it must have appeared very certain that a system of civilization cannot be fitted to a nation not its originator. Why, then, this calling for the French System, or for any system now in use? Is American Technical Education to be a mere reflex of foreign systems? It ought to be and will be peculiarly American. Guided by European systems we certainly must be, and from their defects we must learn what to avoid, for when we are too old to learn, then are we too old to teach. The French system is good in France, the English in England, the German in Germany, and so on. Each after many alterations and amendments, is more or less peculiarly fitted to the wants and adaptabilities of its own peculiar nation. It will be the duty of our leaders to pick out the good points, reject the defects, and with their advantages, give us a start, trusting to American intellect to establish an American system; and I believe as the system of common school education in America is superior to that of any other nation in the world, so the American system of Technical Education will be superior to all others.

We have been tardy in beginning, and it will be strange if we do not make a great rush to do great things, and it will be yet more strange, if, in such a case, we do not ignominiously fail as Germany, France and England failed. Shall we allow ourselves to fall into the same error into which these nations fell? Rushing to excel the gorgeousness of art in the Middle Ages, they rushed to death. They mistook the aim of technical education, and the International Exhibitions tried them all impartially, passing very severe sentences. Instead of initiating a system of industrial education for the benefit of the working-man, for the mechanic, who is the sinew of monarchies and republics alike, they lifted themselves towards the higher regions of art, and tried to equal, and if possible, excel Velasquez, Leonardo da Vinci, Titian and Raphael.

The honor of Velasquez was the dishonor of Spain; the honor of Leonardo da Vinci, that of Milan; the honor of Titian, the fall of Venice, and in the fame of Raphael was the fall of Rome. There is no more vivid

lesson in the history of art than this, that when the arts have been supported by and for the *noblesse* only, the poor have been trampled down that their debasement might pamper to the pride of life, a pride which supports itself by violence and robbery, a pride which led to the destruction of the arts themselves, and of the states in which they flourished.

Whatever *our* system is to be, it must shun the vain pomp of the Middle Ages, and become the means of comforting and enlightening the masses—it must be initiated and supported "by the people and for the people."

It is not my intention here to examine the professional or atelier art of the three great European systems, but merely to present their methods of teaching "The Alphabet of Technical Education," viz: *drawing*. I call this the A, B, C, of Technical Education, because in the experience of every nation that has for any length of time carried on a systematic scientific training, nothing can be done without a sound knowledge of drawing, industrial and mechanical; and, if we are to have a system of industrial drawing that will benefit the State, it must be commenced in the common schools. The foundation-stone of Technical Education is drawing in the common schools.

Three systems of drawing are presented to us by France, Germany and England.

In the French system but one medium is used—carbon, chalk, or charcoal—and this is used from first to last. The drawings are made upon a coarse, grey paper, a little inferior in quality to the paper used by tradesmen to wrap parcels in. This system ignores altogether outline drawing, and stump and leather are in continual use. The three stages of study are:

1. *From shaded copies.*
2. *From the cast, of figure and ornament.*
3. *From the living model.*

Beginning with simple, bold details of ornament drawn with thick lines, the pupil with stick of charcoal in hand starts on his art-course. As one might expect, having no other means of measuring than with his eyes, and not being allowed to sit nearer the copy than at a distance of three feet, he makes woful plights of his drawing and of himself. But he soon tires of such a black mess, and such unmeaning lines, and gets to cleaner habits and more correct observation of form, till by the time he has completed from twenty to thirty drawings a change, sometimes wonderful, is noticed. The charcoal is used economically, the piece of wash-leather is seldom used, and the pupil under the best of teachers gives proof that he has already caught the fundamental principles of *chiaroscuro*.

Thus the French system regards all drawing as a massing together of light and shade, and if this be a correct idea of industrial drawing, I know of no means by which the end can be attained more rapidly and more surely. It is a free and powerful mode of work and is consequently very desirable, but it cannot be resorted to without the aid of superior examples and excellent instruction. I have tried this system in classes, but have been compelled to give it up because children cannot grasp the intricacies of light and shade, and from want of time to give the necessary instructions. It should be recollected that in France the pupil's age at beginning the course is from 15 to 18 years, and it is a part of his indenture that he attend a school of design during 10 hours per week. The French system is, for adults or persons who have never drawn and to whom time is an object, the best that could be adopted, but it has two glaring defects, its ignoring outline drawing, and want of practice in coloring from nature. The Cavé method is used to some extent, but far from generally. This consists in tracing outlines of flat or solid objects through a thin gauze, and then transferring the drawing to paper, or using the tracing as a corrective for an actual copy. But this method requires careful custody of the gauzes and few pupils. Therefore it is not fitted to the wants of our common schools.

The German system makes clearness of line, balance of form, and cleanliness of workmanship a necessary accomplishment. The outlines vary in thickness, being made heavier on the shaded side, and is a pleasant medium between the even lines of the English system and the utter absence of all outline in the French. Studies of light and shade with point and stump work are used, but the exercises are more carefully worked than the French. Both the German and the French schools are very fortunate in possessing every appliance, and splendid examples for the study of art, and in a great measure the splendid excellencies of the schools are owing to such collections and to the nominal cost of examples and practice. The peculiar feature of the German course is its thoroughness in the study of the mechanical department of drawing, *i. e.*, plane

and solid geometry, perspective and projection, which is carried to such an extent that models are made to illustrate the drawings, instead of the common method of making drawings illustrate the models. This modeling of every design and drawing is *the* feature of the German system; still, until we can command the examples so profusely distributed throughout the German schools, and the thoroughness of German teachers, this method cannot be indulged in by us.

The building up of the English system has taken many years of patient toil and observation to accomplish, the schools of design dating from '36. It has been constructed out of the best points of the German, French, Belgian and Swiss systems, and no other nation can show such a grand roll of honor as the English, arising from its technical education. In every other nation science and art have had separate places of abode, and sometimes science has led, sometimes art, but in England they have grown up together, dependent on and helping each other, and aside from the means, the English led the world in the Vienna exhibition of 1873.

The administration is in the hands of the Science and Art Department of the Committee of Council on Education. This administration wisely began with art in the common schools, knowing full well that although scientific axioms cannot be understood without a moderate acquaintance with the subjects of a common education, yet the sooner a child commences to draw, the better. There are four agencies for industrial art education, viz.: 1. A museum of industrial master-pieces and celebrated paintings. 2. A national training-school for art-masters in the same building as the museum, thus giving ample opportunity for thorough study of the best examples of industrial art, ancient, mediæval and modern. 3. A traveling museum for exhibition in the provinces, which circulates good specimens of industrial art, books and paintings, to local schools. 4. Examination and supervision of all grades of art instruction, and this is so methodical that the art examinations are held on the same day and hour all over the United Kingdom.

Art instruction is divided into three grades progressing in difficulty, and called the First, Second and Third grades. No one is allowed to give instruction in any one grade unless properly qualified and certificated, and when thus qualified, etc., the government recognizes their qualifications by paying a sum of money for each successful examination passed by the pupils of these certificated teachers.

The First Grade, which I shall most particularly describe, as it bears directly on our wants at the present time, is that given in the day-schools to all children, boys and girls alike, commencing in the infant schools. The lessons are given by the regular common-school teachers, who must have passed a successful examination in the *Second Grade*. The drawings are all in outline; the free-hand, the model and the geometrical. The pupils copy at first from a drawing of large size made by the teacher on the blackboard. This drawing is always made in the presence of the children, and the best method of drawing is shown them. Of course the drawings are very simple to begin with, the division into equal parts of right lines and curves, how to test the amount of curve, balancing straight lines and curves, enlarging and diminishing drawings, drawing from memory the object or drawing last made, etc. Small prizes, in the shape of helps to art are given to successful pupils. The examinations in this grade are for children under twelve years of age, and are held annually in March.

The Second Grade subjects are the same as the *First Grade*, but of a more advanced stage, and comprise perspective, both parallel and angular. This is the grade in which the teachers of national schools are certificated. Blackboard drawing from memory is also added, and the elements of design. All drawings in this grade are in outline, although a great many teachers draw and shade from the cast and the living model, and paint in monochrome, in water colors and in oil, and model with considerable force.

The Third Grade is intended for art-masters or teachers of schools of art as distinguished from the national or common schools. It embraces every subject in the higher walks of painting, design and sculpture, etc. Already there are 417 art-masters and mistresses who teach in 119 schools of art with 21,141 pupils, all studying the higher branches of art.

It will be seen that the English system has for its foundation outline drawing in pencil, and until the pupil gets over this stage, he does not advance. From the earliest attempt in a national school to the elementary works in schools of art all is outline, and it is a net through which every

pupil must pass. Having once passed this severe course, the practice is not unlike the French plan, with this exception, the English pupil is not allowed to use the stump until he has made considerable progress with the charcoal point. The German and the English systems differ but little; perhaps the German system is more thorough in its mechanical drawing, and less so in its outline drawing.

And now to sum up. The French system is not adapted to our wants, because it is too far advanced for our common schools; nor can we obtain, except at an immense outlay, the copies that would be necessary to supply all the schools, nor can we command teachers of drawing who must have had very considerable experience in drawing and in teaching. And for a reason more cogent than all others, it ignores outline drawing, which is the foundation of all design.

The German system lacks thoroughness in outline drawing, which is all we can expect from our common schools. In all other things there is no fundamental difference between the German and the English. The French system of work in chalk and stump is very preferable at first for a night school for the training of artisans who have never drawn.

The three best points we can adopt from the systems mentioned, are the chalk and stump from the French, the mechanical drawing, with models to illustrate, from the German, and the outline drawing from the English.

I have drawn attention to this because so many theorists have called for the French method, when it is evident they have never been in a French art school, nor have they studied the method they advocate and the wants of this country. Surrounded as the French are with art in all its magnificence, such a thing as false taste in art is almost an impossibility. We are not so blessed as yet. Our system must be peculiarly American, not English, not German, not French; still we may learn from them. I speak impartially when I say that my experience, having seen all tried in England and in their own schools, is in favor of the English. As a scheme of art education, it comprehends all the necessities of child, of student, or of artisan, because it is progressive and provides for the professional training of art-masters in a more thorough manner than any other nation. Still it is not altogether suitable to America, and I have great faith that if the system be advised by practical men who are acquainted with the methods already in use and the necessities of the United States, especially of our own State, our system will be superior to any other in the world.

TEACHER AND PARENT.

THEIR OFFICE IN THE BUSINESS OF TEACHING.

BY E. SCHNEIDER.

MUCH has been said in the pages of the SCHOOL JOURNAL, to the teacher, about the nature and duties of his office; little has ever been said to the parents. Allow me, therefore, to say something to both. My experience and age claim, I think, a little of their attention; at least so much of it, as will enable them to learn whether I have something to say worthy of their attention. And why should you parents not listen, when addressed in regard to that which is very near your own hearts; that which has reference to the future happiness of your own children? All your toils, and the great burden of your anxieties have more or less reference to the future of those whom you love so tenderly, and with a fervor that can burn in a parent's heart only. This being so, you ought also to feel greatly concerned in regard to the views, feelings and principles of those into whose hands you have placed so much of your children's future welfare. For, let it be remembered that a teacher who enters upon his duties with a proper spirit, and who is capable of understanding ihe high and commanding position he occupies, and who is willing to yield his powerfully pursuasive influence in favor of the future happiness of those entrusted to his care, can accomplish far more than is generally supposed. There is something else, besides the regular lessons, that mould and shape the spiritual nature of the child during school days. That glowing enthusiasm, that earnest manner, the zeal and sincerity, the fidelity and unceasing toil, the kind and helping hand, the encouraging word spoken at the proper time, and with feeling of earnestness; all these things seen in the teacher, and seen and appreciated by the pupil, as they can be by no one else, leave an impression upon the mind and heart that will be carried to the grave, though the pupil should live to the age of one hundred years. The teacher being therefore able to give such a happy direction to

the human mind, how important is it that parents and school directors exercise great judgment in selecting teachers who are to guide and direct the little foot-steps of those who are to be taught.

And how great and widely blessed are the results of that teacher who is truly faithful in the performance of his work. I would not exchange the position of a useful instructor for the robe of a Prince. or for the sceptre of the proudest monarch that sits upon any European throne. To enjoy the satisfaction of having led many by the hand in their school-boy days, and directed their minds into habits of thinking that led them successfully into elevated and honorable paths of life, affords greater consolation than the most royal honors the world can give. "'Tis true, the career of the teacher does not lead to distinction or to wealth. It is not brilliant, but it leads to something better than distinction—to the heart-felt honor and affectionate respect of those who feel that they have been made wiser and better by its influence. Few men, in their old age, are looked upon with such reverential regard as faithful and intelligent teachers." "I often conversed," says an appreciative writer, "with a gray-haired man, who had the good fortune to receive, when quite a child, instruction from a man of learning and polished manners, and noble character; and though he had been much in society, and had seen familiarly all the most distinguished men of his day, he still looked back upon his good old teacher, as the model of an accomplished scholar and a finished gentleman, and that there was no one for whom he had higher respect than he cherished for the memory of that noble teacher." Is not such remembrance as this higher and more enduring reward than the remembrance of popular favor?

Although the teacher's business is such a noble work, and if properly managed produces such important results, yet few, even of those who take upon themselves the name of teacher are conscious of this fact, or even care to feel the truth of it. Therefore, the number of those who are eminently successful as teachers is very small.

The art of communicating knowledge and of awakening, in the minds of those who are taught, an interest in the subjects to which their attention may be directed, is certainly possessed by only a few. But it is also equally true that this natural talent is often not cultivated sufficiently by those who possess it. And, although the act of imparting knowledge, if properly communicated, is as agreeable to him who teaches as is the reception of it to him who learns, yet how often does it happen that this pleasure is experienced neither by pupil nor teacher! Any one who does not understand or love his profession, whatever it may be, ought to be convinced that he is not in his proper element, and that consequently he can give no satisfaction either to others or to himself. All are fitted for some one or other position in life, and before entering on their career, it is the duty of each one to consider well what position or what profession may suit him best. And the business of teaching, though one in which such dear and tender interests are at stake, is nevertheless more frequently chosen without a careful consideration of the qualifications necessary to fit one for a proper discharge of its duties, than any other position in life. Therefore, this business, though like all other professions, having its peculiar advantages and pleasures, has, nevertheless, not many in it possessing the power and capacity to enable them to enjoy these pleasures. How seldom even is the fact understood that the first thing to be done by the teacher is to find the avenues which reach the heart, as well as those which reach the mind of the pupil. Very few teachers ever think of this, and hence their success can never be equal to their expectations.

The act of acquiring knowledge produces supreme pleasure; and in every period of life, in childhood as well as in manhood, this pleasure can be enjoyed. The child is equally as well pleased to learn something which he did not know before, as is the man of age. But this pleasure is produced by an actual communication of knowledge and not by dull verbiage. If a teacher is at a loss how to account for a scholar's indifference, while he is attempting to teach, let him ask himself whether this indifference does not proceed from a cause that may lie in himself? And if he cannot find the true cause of it, and therefore cannot remove it, let him not allow his displeasure and disappointment to expend themselves upon the hearts of the innocent pupils, by calling them numsculls or blockheads. It is very often true, that in such a case the teacher is the more stupid of the two.

MUSIC, painting, sculpture, engraving, and even the commoner forms of artistic expression, are now judged by severer methods than ever before, and year by year the public taste becomes more critical and more exacting,

ARITHMETICAL REASONING.

BY PROF. EDWARD BROOKS.

IV.—ARITHMETICAL ANALYSIS.

ARITHMETICAL Analysis is the process of developing the relation and properties of numbers by a comparison of them through their relation to the unit. All numbers consist of an aggregation of units, or are so many times the single thing; and hence bear a definite relation to the unit. This relation the mind immediately apprehends in the conception of a number itself. From this evident relation to the unit, all numbers may be readily compared with each other, and their properties and relations discovered. Let us examine the process a little more in detail

Unit the Basis.—The basis of this analysis is the *Unit.* The Unit is the primary and fundamental idea of arithmetic. It is the basis of all numbers, a number being a repetition of the Unit, or a collection of units of the same kind. The relation of a number to the Unit, or of the Unit to a number, is consequently immediately seen from the conception of a number itself. The collection is immediately seen to be so many times the Unit, or the Unit such a part of the collection. The importance of the Unit, as the basis of the comparison of numbers, is thus apparent. Integers, may be readily compared with each other, through their relation to the fundamental element out of which they are formed.

A Unit is *one* of the several things considered, and, since a fraction is a number of equal parts of a Unit, it is seen that we have a second class of units which we may call *fractional units.* These two classes of units may be distinguished as the *Unit* and the *fractional Unit.* A number of fractional units give rise to a class of numbers called *fractions.* The same principle of comparison obtains, in the comparison of these as in the comparison of integral numbers. A *fractional Unit* being *one* of several equal parts of the Unit, its relation to the latter is simple and immediately apprehended. We can thus compare different *fractional units* by their relation to the *Unit*, as we did integral numbers by their relation to it. The comparison of fractions, which at first might have seemed difficult, thus becomes simple and easy.

From this consideration we are enabled to see the importance of the Unit in the process of arithmetical analysis. As the basis of numbers, it becomes the basis of reasoning with numbers. We compare number with number, or fraction with fraction, by their intermediate relation to the Unit. The Unit thus becomes the stepping-stone of the reasoning process, the central point around which the circle of logic revolves.

Comparison of Integers.—Numbers are compared, as has already been remarked, by their relations to the Unit. In the comparison of numbers, the relation between them is not immediately apprehended, but knowing the relation that each sustains to the Unit, we can ascertain their relation to each other by this simple intermediate relation. To illustrate this, suppose we wish to compare any two numbers, as 3 and 5; let the problem be: "What is the relation of 3 to 5?" or "3 is what part of 5?" We would reason thus: *One* is 1 fifth of 5, and if *one* is 1 fifth of 5, 3, which is *three* times *one*, is *three* times 1 *fifth*, or 3 *fifths* of 5. Hence, 3 is 3 fifths of 5. In this example we cannot compare 3 directly with 5, we therefore make the comparison indirectly, by considering their intermediate relation to the Unit, which is readily apprehended. Again, take the problem: "If 3 times a number is 12, what is 5 times the number?" Here, it may be remarked, 3 *times* the *number* is the *known* quantity, and 5 *times* the *number* is the *unknown* quantity, which we wish to find by comparing it with the known quantity. How shall we make this comparison, and thus pass from the known to the unknown? We cannot compare them *directly*, since the relation between them is not readily perceived; we must compare them *indirectly* by means of their relation to the Unit. The process of reasoning is as follows: If 3 times a number is 12, *once* the number is $\frac{1}{3}$ of 12, or 4; and if *once* a number is 4 *five* times the number is 5 times 4 or 20. Thus we readily pass from three times the number to five times the number—from the known to the unknown—first passing from *three* to *one*, and then from *one* to *five*. In the same manner all numbers may be compared with each other, their relation being determined by this intermediate relation to One, the Unit, the basis of all numbers.

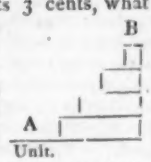
Comparison of Fractions.—Fractions are also compared by means of their relation to the Unit. A Fraction is a *number of fractional units.* The fractional Unit is one of several equal parts of the Unit; hence the relation between it and the Unit is simple and readily perceived. When we have a number of fractional units—that is a Fraction—in comparing it to the Unit, we must first pass from the *number* of fractional units to the *fractional Unit* itself, and then from the *fractional Unit* to the *Unit.* From this we can readily pass to a *number*, or to any other *fractional Unit*, and then to any number of such fractional Units, that is, to any fraction. This will be more clearly seen by its application to a problem.

Take the problem, "If $\frac{2}{3}$ of a number is 24 what is $\frac{3}{4}$ of the number?" We reason thus: If *two*-thirds of a number is 24, *one*-third of the number is $\frac{1}{2}$ of 24, or 12, and *three-thirds*, or *once* the number, is 3 times 12, or 36. If *once* the number is 36, *one-fourth* of the number is $\frac{1}{4}$ of 36, or 9; and *three*-fourths of the number is 3 times 9, or 27. In this problem we compare the two fractions, $\frac{2}{3}$ and $\frac{3}{4}$, by passing from *two*-thirds down to *one*-third, then rising up to the Unit, then passing down to *one-fourth*, and then up to *three* fourths. In other words, we pass from a *number* of fractional units to the *fractional unit*, then to the *Unit*, then to another *fractional unit*, and then to a *number* of those fractional units. We first go down, then up, then down again, and then up again to the required point.

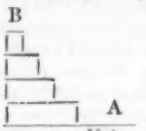
Another excellent example of this method of comparison is given in the solution of the following problem: What is the relation of $\frac{3}{4}$ to $\frac{4}{5}$? Here $\frac{4}{5}$ is the basis of comparison with which it is required to compare $\frac{3}{4}$. This relation cannot be immediately seen, but it can readily be determined by the method of analysis. The solution is as follows: *One*-fifth is $\frac{1}{5}$ of $\frac{4}{5}$, and if *one*-fifth is $\frac{1}{5}$ of $\frac{4}{5}$, *five*-fifths, or *One*, is 5 times $\frac{1}{5}$, or $\frac{5}{5}$ of $\frac{4}{5}$. If *One* is $\frac{5}{5}$ of $\frac{4}{5}$, *one*-third is $\frac{1}{3}$ of $\frac{5}{5}$, or $\frac{5}{15}$ of $\frac{4}{5}$, and *two* thirds is 2 times $\frac{5}{15}$, or $\frac{10}{15}$; hence $\frac{3}{4}$ is $\frac{10}{15}$ of $\frac{4}{5}$. In this problem we see the same law of comparison, and this law runs through the entire subject.

Having given this general idea of the process, I will state the several simple cases of arithmetical analysis, and illustrate the process of thought by means of a diagram. The central relation of the Unit to the thought process, and the transition *from* the Unit and *to* the Unit, will be readily seen.

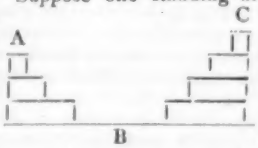
CASE I.—*To pass from the Unit to any number.* Take the problem: If 1 apple costs 3 cents, what will 4 apples cost? The solution is as follows: If 1 apple costs 3 cents 4 appples, which are four times 1 apple, will cost 4 times 3 cents, or 12 cents. In this problem the mind starts at the Unit A, and ascends 4 steps to B.



CASE II.—*To pass from any number to the Unit.* Take the problem: If 4 apples cost 12 cents, what will 1 apple cost? The solution is as follows: If 4 apples cost 12 cents, 1 apple which is 1 fourth of 4 apples, will cost one fourth of 12 cents, or 3 cents. In this problem the mind starts at the number 4, four steps above the basis, and steps down to the Unit, or basis of numbers.

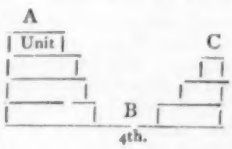


CASE III.—*To pass from a number to a number.* Take the problem: If 3 apples cost 15 cents, what will 4 apples cost? The solution is: If 3 apples cost 15 cents, 1 apple will cost ⅓ of 15 cents, or 5 cents, and 4 apples will cost 4 times 5 cents, or 20 cents. In this case we are to pass from the collection *three* to the collection *four*. In comparing *three* and *four*, their relation is not readily seen, but knowing the relation of *three* to the *Unit*, and of the *Unit* to *four*, we make the transition from *three* to *four* by passing through the *Unit*. This may be illustrated as follows: Suppose one standing at A, and wishing to pass over to C. Unable to step directly from A to C, he first steps down to the starting point, B, and then ascends to C. So in comparing numbers, when we cannot pass directly from the one to the other, we go down to the Unit, or starting-point of numbers, and then go up to the other number. These relations are intuitively apprehended, being presented in the formation of numbers. In the given problem we stand *three* steps above the Unit, and we wish to go *four* steps above the Unit. To do this we first *descend* the *three* steps, and then *ascend* the *four* steps.



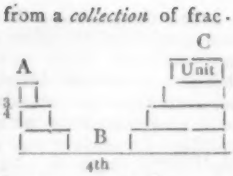
CASE IV.—*To pass from a Unit to a fraction.* Take the problem: If one ton of hay costs $8, what will ¾ of a ton cost? The solution is as follows: If *one* ton of hay costs $8, one-fourth of a ton will cost ¼ of $8, or $2; and 3 fourths of a ton will cost 3 times $2, or $6.

In this problem we pass from the *Unit* to the *fourth*, one of the equal divisors of the Unit, and then to a collection of such equal division. In other words, we *descend* from the integral Unit to the fractional Unit, and then *ascend* among the fractional units. It is as if we were standing at A and wishing to pass to C; we first take *four* steps down to B, and then *three* steps up to C, instead of trying to step immediately over from A to C.



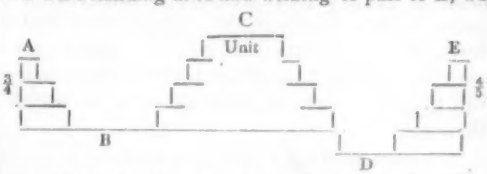
CASE V.—*To pass from a fraction to a Unit.* Take the problem: If ¾ of a ton of hay cost $6, what will one ton cost? The solution is as follows: If *three*-fourths of a ton of hay costs $6, *one*-fourth of a ton will cost ⅓ of $6, or $2; and *four*-fourths of a ton, or *one* ton, will cost 4 times $2, or $8.

In this problem we pass from a *collection* of fractional units to the *fractional Unit*, and then to the integral Unit. It is as if we were standing at A and wished to pass to C. We cannot make the transition directly, so we step *three* steps down to B, and then *four* steps up to C.



CASE VI.—*To pass from a fraction to a fraction.* Take the problem: If ¾ of a number is 15, what is 4 fifths of the number? The solution is as follows: If *three* fourths of number is fifteen, *one*-fourth of the number is ⅓ of 15, or 5; and *four* fourths of the number, or *once* the number, is 4 times 5, or 20. If the number is 20, *one fifth* of the number is 1 fifth of 30, or 4; and *four*-fifths of the number is 4 times 4, or 16.

In this problem we wish to compare the two fractions, ¾ and ⅘, but since we cannot perceive the relation of them directly, we must compare them through their relation to the Unit. To do this we first go from *three* fourths to *one*-fourth, then from *one*-fourth to the Unit, then from the Unit to *one-fifth*, and then to *four-fifths*. In other words, we first go down from the *collection* of fractional units to the fractional *Unit* and then up to the *integral Unit;* we then descend to the *other fractional unit*, and then ascend to the *number of fractional units* required. It is as if we were standing at A and wishing to pass to E, we



cannot step directly over from one point to the other so we pass from A *three* steps down to B then *four* steps up to C, then *five* steps down to D, and then *four* steps up to E.

These diagrams, it is believed, present a clear illustration of the subject, and enable one to understand the process of thought in the elementary operations of arithmetical analysis. The Unit is thus seen to lie at the basis of the process, the mind running to it and from it in the comparison of numbers. It will be remembered, however, that these are merely illustrations, and are not designed to convey a complete idea of the process in all of its details. This can only be seen by a careful analysis of the process itself.

Analysis Syllogistic.—The process of arithmetical analysis is a process of mediate comparison, and is consequently a reasoning process. This will appear from the fact that it may be presented in the syllogistic form. Take the simplest case: If 4 apples cost 12 cents, what will 5 apples cost? Expressed in the form of a syllogism we have the following:

The cost of 1 apple is ¼ the cost of 4 apples.
But, ¼ of the cost of 4 apples is ¼ of 12 cents, or 3 cents;
Hence the cost of 1 apple is 3 cents.

The cost of *five* apples is 5 times the cost of 1 apple;
But, 5 times the cost of 1 apple is 5 times 3 cents, or 15 cents
Hence, the cost of five apples is 15 cents.

It is thus seen that the process of analysis is purely syllogistic, and is, consequently, a reasoning process. It is not usually presented in the syllogistic form, since it would be too stiff and formal, and moreover would be more difficult for the young pupil to understand.

Direct Comparison.—The comparison of numbers, so far explained, is indirect and mediate, through their relation to the Unit. After becoming familiar with this process, the mind begins to perceive the relations between numbers themselves, and is thus enabled to reason by comparing the numbers directly instead of employing their intermediate relations to the common basis. To illustrate, take the problem: If 3 apples cost 10 cents, what will 6 apples cost? We may reason thus: If 3 apples cost 10 cents, 6 apples, which are *two times* 3 apples, will cost *two times* 10 cents, or 20 cents. Primarily we would have gone to the Unit, finding the cost of *one* apple; but now we may omit this and compare the numbers directly.

With integral numbers this direct comparison is simple and easy; but with fractions it is much more complicated and difficult. Thus, if $\frac{2}{3}$ of a number is 20, it is difficult to see directly that $\frac{4}{5}$ of the number is $\frac{6}{5}$ of 20; that is, that the relation of $\frac{4}{5}$ to $\frac{2}{3}$ is $\frac{6}{5}$; hence, though we should avail ourselves of the direct relation of integral numbers, it will be found much simpler to compare fractions by their intermediate relations to the Unit.

LIGHT FROM MASSACHUSETTS.

ONE of the soundest thinkers and most efficient school officers in New England is Henry F. Harrington, Superintendent of the schools of the city of New Bedford, Massachusetts. From his late report we take two extracts found below, concerning points in school management of much interest.

EXPLANATIONS IN ARITHMETIC.

While thus engaged, my attention was arrested, as never before, by the character of the recitations in Arithmetic. I found that more than half the time of those recitations was spent in explanations of the abstract theory of numbers and of the processes by which the arithmetical work was to be performed; and in efforts to make the scholars understand them. This is in strict accordance with the requisites of the Manual, which, following the lead of public opinion, enjoins it on the teachers to train scholars so that they may be able to give an intelligent explanation of all the work they may do. Then I was led to make inquiries how far these elaborated and reiterated explanations of processes were of advantage; how many remembered them, giving evidence that they had sunk into their minds and been added to their stores of intelligence. And from the united grammar corps of teachers, with scarce an exception, came the emphatic response that such instruction is a waste of time; that the philosophy of the processes of arithmetical work is almost invariably beyond the capacities of the scholars at the time when those processes are necessary for their practice and advancement. For no matter how thoroughly it may be explained, it is speedily forgotten by the great majority.

I subsequently made careful tests of the truth of these statements, and was surprised to find in what an intellectual muddle many of our scholars exhibited themselves to be on the points in question, even those in the high school. And I discovered this fact also, the importance of which was not lost upon me, that the most were not able to work out on their slates, promptly and correctly, the problems which might be given to them. Then I reflected that since this slate work—this practical evidence that their minds can readily grasp the conditions of a problem, and have learned to apply processes rapidly and correctly to its solution, is, after all, the chief source of the good to be derived from the study of Arithmetic, whether as regards mental discipline, ability to put the faculties down to hard, methodical, thorough work, or the practical uses of the study in after life, it would be far better that the effort wasted upon the explanation of processes should cease, and the time thus gained be divided between an increased amount of good, faithful slate work and the studies which are now clamoring for due attention.

Then I sought information as to the state of things in this connection in other communities; and learned that in other high schools, even where the systems of instruction maintain the best reputation, it is found, just as it has been demonstrated in our own, that the majority of scholars do not profit by the explanations which are elaborated at such an expense of effort and time in the grammar schools; that they retain no clear, intelligent memory of them. The companion fact in relation to slate work, which has been noticed in connection with our own high school, was fully paralleled in these others. For I was told that sufficient slate work to make the scholars ready, accurate, and trustworthy in the practical application of the study, had been sacrificed in this abortive attempt to teach them its philosophy; and so neither was successful.

Pursuing my investigations still further, I learned to my surprise that in Prussia, where the schools are strictly regulated by the Government, the teachers of the elementary schools are forbidden to give any instruction in the theory of numbers and the philosophy of the processes of work;* it being declared that slate work, that is the practical application of processes to problems, is the method of most advantage to the scholars in every sense, and the only method for which time can be spared.

LENGTH OF SCHOOL DAY.

It was my purpose to limit my remarks in this connection to illustrations of the fact that the number of the school studies and exercises which are considered indispensable at the present day, is too great to be properly accomplished in the prescribed number of school hours, and not to discuss at all the merits of the question as to the proper limits of school time. For so many unsettled problems of radical importance must necessarily have place in such a discussion, that I could do them no sort of justice in this report. Still, as I have made statements and references which might lead to misconceptions of my position on this vitally momentous subject I will express my convictions as to one or two of its most interesting and important points.

And, first, I believe with emphasis, so far as the *boys* in our schools are concerned, provided their studies be judiciously regulated and intermingled, that six hours daily attendance at school is not a moment too much for mind or body—no, not although in addition a lesson be assigned to be studied out of school. All the outcry to the contrary, whether proceeding from parents, teachers or physicians, is wholly unsupported by facts. Look at Ger-

*That part of arithmetical instruction which is specifically termed "mental arithmetic," is expressly excluded from the Prussian schools, as it deals mainly with abstract numbers. The government "Regulations" call it "a useless fatigue of the brain."

many. There you find the scholars of many of the elementary and all the secondary schools on the stretch of severe school work for forty hours a week. So it has been for a hundred years. And are they emasculated thereby? Is their virility sapped, and a race of puny, incapable valetudinarians ushered to manhood with every generation, bearing awful protest against the crime of their youthful mismanagement? Let the products of German thought reply, the miracles of the age for thorough investigation, subtle analysis and profound and exhaustive reasoning. Let Gravelotte and Sedan reply, and the whole campaign of which they were wonder-strokes of power—through which the Germans fought with an endurance so patient and indomitable, an energy so untiring, as well as an "*elan*" so vivacious and vigorous, as to extort the admiration of the world and place them in the forefront of the nations for the noblest qualities of national life and character. Look at our own New England. In most of her schools, for centuries, the scholars have been confined six hours a day and have studied additional hours at home. And did the sturdy regiments which left her borders to save their country in the late civil war, pushing on undaunted, unbaffled, to victory, through exposures and trials seldom exampled, did they exhibit the characteristics of an enfeebled and deteriorating race?

Once more, study the life tables of the Insurance companies, prepared with the utmost care in the interests of pecuniary gain, and therefore to be trusted wherever the existence of errors would damage those interests. Those tables tell us that there has been a vast increase in the average length of human life during the last hundred years, most conspicuous in those countries which are most civilized, *and in which the intellect has received the most thorough and universal culture.* Is not such testimony conclusive? Is there any hint in its cheering statistics of constitutions broken through overstudy, and damaged parents entailing their weaknesses on offspring who are accumulating fresh injury through fresh educational outrages? And yet again, what classes in the community, as proved by these same reliable tables, are the longest lived? They are the student classes; the professional men, whose youth was spent in mental delving, and whose maturity has been devoted to tasking intellectual toil. Yes; the good God is consistent in the provisions of his divine wisdom. He has made the mind of man to be his noblest possession, and in admirable conformity, He has made the thorough culture of that mind productive of physical health and endurance as well as of intelligence and mental power.

Are any disposed to seize on the admission that we have too many studies in the schools for the time allowed them, as proof that the scholars are worn down with an overtasking crowd of pursuits? It would be an unwarrantable deduction. Let the limits of the admission be carefully noted. The studies are too many, not because the strength of the scholars is insufficient for them, but because they are crowded into too narrow a space. Most of the new exercises are what have usually been called *play* studies not *work* studies. In old times, if a boy with artistic tastes was caught at drawing pictures on his slate or on paper, he received a rap on the knuckles, with the admonition to reserve such frolicsome demonstrations until after school time. If a girl, forgetting herself, hummed a tune, she too was disciplined, with the comment that such a plaything as music was not appropriate to the school-room. If a mischievous or nervous lad indulged in saltatory or brachial gesticulations to work off his superfluous energies, he was forcibly reminded that such physical performances had nothing to do with study and must not be indulged in until after dismission. And oh, the myriads of story books that have been confiscated because stealthily read after the lessons had been learned, in the days when to have a story book in school was to commit one of the seven deadly sins! Yet these very same exercises, Drawing, Music, Gymnastics and the reading of interesting books, occupy at least *one fifth of the school time*, taking the place of a corresponding amount of the delving and cramming which made up the sum total of the old-style education. And still the cry goes abroad that the school children are fearfully overworked!

I have been discussing this topic with reference solely to the *boys* in our schools. When we take the other sex into consideration, I am ready to admit that the question is not so clear. It may be that girls cannot healthfully endure the same amount of mental effort as boys, and that we are violating the ordinations of nature in subjecting them to the same tasks. In Prussia, the girls are not taught in the same manner nor to the same extent as the boys, on the express ground, as officially proclaimed and argued by the Government, that their physical organization does not justify such a strain upon their powers; and it is certain that where complaints are made of over-pressure in any of our schools, the alleged victims of such pressure are almost invariably girls.

But before we assume it to be a fact that the sexes have unequal power of mental labor and endurance, it must be determined how far any injurious effects of study which may have been developed, are owing, not to study in itself, but to the character of the incentives under the spur of which it has been prosecuted. Delicately sensitive in their feelings as compared with the boys, and quick to respond to appeals made to their love of approbation, the studious girls are filled with eager emulation the moment a prize is offered for their competition. Their effort becomes painfully intense. They strain every nerve in the contest, a restless anxiety, meanwhile morbidly preying upon and diminishing their strength. And in those localities where the principle of emulation is systematically and largely employed in the schools, where examinations, exhibitions, festivals, medals, and other details of competitive machinery are ceaselessly pressing home their exciting stimuli, the influence of the girls must be fearfully pernicious. But it is a reasonable answer to an argument drawn from such premises, that the noxious stimuli constitute the nuisance to be abated, not the study with which they have been improperly connected.

TEXT-BOOKS IN PHILADELPHIA.

THE great expense to parents of pupils in our public schools for books, caused in part by frequent changes ordered by directors, led to a change in the law, so that books can hereafter be changed but once in three years. This however does not reduce the cost as much as it may be done, if books and other supplies were furnished by the

boards of directors, at the wholesale prices for which they may be bought in quantity. Philadelphia and some other districts have furnished books and supplies for many years.

There were in Philadelphia, at the beginning of 1874, by the annual reports, 86,635 pupils in all belonging to the public schools. This number is the basis for the apportionment; the addition of a whole new division, at once, say 50 pupils, being the only case in which an increase is allowed for any school. Then a copy of each book used in that division, for each pupil of the division, is furnished as an extra allowance. No allowance is made for some pupils leaving school and others entering,—that is, for a larger "*whole number attending*," during the year. If a school of four divisions had 180 pupils January 1st, and it increased gradually during the year to 230, the aggregate amount that the principal may draw will not be increased. In smaller districts than Philadelphia, the rule need not be so inflexible.

For these 86,635 pupils at differing rates, for the different grades, $94,166.70 was appropriated, out of the whole appropriation of $100,000. By division, any one may find that less than $1.08 7-10 per pupil is the cost *on the average*, for all grades; from the high school, where a set of books for the *first term* of eight half-yearly terms, would cost about $15, with additional books each term, down to the primary schools, with pupils six years of age.

The manner of calculating the amount that may be drawn, is as follows: Take the case of a large ungraded school, called in Philadelphia a consolidated school, of 180 boys and 220 girls, 400 in all. Books wear out faster in boys' schools than in those for girls; so a different rate is allowed. Probably there would be no difference if there were co-education of the sexes, as elsewhere, but the difference is allowed in the consolidated schools also.

180 at $1 15	. . . . .	$207.00	
220 at 1.05	. . . . .	231.00	$438.00

Two-thirds, $292, may be drawn before vacation, most of it at once, say in February. The remaining one-third, $146, is to be drawn after vacation, say all of it in September, in one requisition.

The books, etc., for a large school building, are packed in boxes without lids, with holes at the ends for handles, and taken to their destination in a wagon. The small intermediate requisitions, if any, are not delivered free, but are sent for. Blanks for requisitions are furnished; the number of dozens, gross, etc., of articles, the price per dozen, &c., are entered, the amounts carried out and footed up, as in a bill. Every book is stamped, on the title page, and elsewhere inside, "Property of the Board of Public Education, 1st School District, Pennsylvania," before it leaves the rooms of the board for distribution. The teacher must use judgment, and must keep up a full supply of all things needed, so a change of books must be gradual.

The case above may be considered, except in amount, as similar to most of those in other school districts. The rate is above the average of the whole. It must be understood that if there were no stock of supplies on hand in a school at the beginning of a year, the allowance would not be sufficient. It was formerly too small for the higher grades; it is now sufficient to keep all supplied, and to introduce new books, if there are not too many new ones required at once. A district commencing the plan might need a larger allowance the first year, but after that there would be enough at a dollar a year for each pupil, or supplies would be lost or wasted.

Excluding the high and the normal schools, the rate is a little over $1.04 per pupil. The four cents may be considered as paying for the roll-books, etc., for the whole school; leaving one dollar for each pupil. In 1873, the rate was the same, $1 04; in 1872, 99½ cents; in 1871, 95¼ cents, not including high and normal schools, which were not fully supplied without cost to pupils, $2000 being allowed to the two schools, instead of the $5,000 of this year. From 1871 to 1874 the rate per pupil for grammar schools has been raised; for boys, 70 cents, for girls, 75 cents. Primary schools having money to spare, have been lowered from 55 and 45 to 50 and 40 cents, for boys and girls respectively.

Do parents pay as little as a dollar a year, on the average, for books and stationery, if they purchase the books, copy books, drawing books, paper, pens, slate pencils, lead pencils, slates, six-page book-slates, wall maps, and every thing else needed, at a country store? Many of the books on the list of grammar school supplies are used only in the senior classes—thirty pupils only in two hundred to three hundred. The numbers show that the mass of the pupils are in the schools of the lowest grade; the same will be found to be the case in boroughs and other districts where the schools are graded. May we not find here an argument in favor

of grading schools? If the supplies can be so much lower per pupil, other expenses, especially the cost of tuition, may be at a lower rate. Some, of course, will be the same for every pupil.

There are two series of arithmetics, three in each. It will be understood that only one will be used, there being a choice to be made by the sectional board of directors; in some instances by the principal teacher. There are also two series of geographies (3), copy books, grammars (2), history of the United States (1), mensuration (1), speller (1) and music book (1). Pens, ink, slates, and lead pencils give a choice. Of readers, two series were required; one was added lately, giving some choice. All other items are required and are used generally.

We may suppose that, throughout the state, even if full supplies are granted by the boards, so that parents furnish nothing whatever, the lists will not be one-half as long. Some books, such as readers for advanced pupils, may be collected at the end of the lesson and put away in school,—never carried home by the pupil. They will last much longer than if carried to and fro, and perhaps damaged by little ones at home. I have seen school houses that could not be fastened up; any straggler could enter at will. I will make no allowance for them; they should be made secure. Of course, when a pupil leaves school, all the books are to be returned, and taken care of by the teacher, in a locked closet. If the pupil neglects to return them, they are to be sent for. It is useless to further specify the advantages; each teacher will understand them.

LIBER.

["Liber" sends us, in connection with his communication and illustrative of it, several statements and forms, as follows: Report of Committee on Supplies for 1874; list of books and stationery used in the public schools of Philadelphia, with the prices annexed, which seem very reasonable; slip to be pasted inside the cover of each book; forms of orders for supplies used by teachers, &c. Of these we can find room only for the first named, giving the apportionment of books and stationery for 1874.—ED.]

SUPPLIES FOR 1874.

The Committee on Supplies would respectfully recommend the following apportionment of books and stationery for the year 1874, based on the number of pupils belonging at the end of the year, December 31, 1873:

High School	570 pupils,	=	$3,333 00
Normal School	537 "	=	1,667 00
Boys' Gram.	$3 25 × 6,467 pupils,	=	21,017 75
Girls' "	3 00 × 6,808 "	=	20,424 00
Boys' Consol	1 15 × 3,491 "	=	4,014 65
Girls' "	1 05 × 3,172 "	=	3,330 60
Boys' Second'y	1 00 × 16,589 "	=	10,589 00
Girls' "	90 × 11,156 "	=	10,040 40
Boys' Primary	50 × 22,123 "	=	11,061 50
Girls' "	40 × 21,722 "	=	8,688 80
			$94,166 70

This distribution gives an aggregate of ninety-four thousand one hundred and sixty-six dollars and seventy cents. City Councils appropriated one hundred thousand dollars, from which deduct the aggregate, and there will remain five thousand eight hundred and thirty-three dollars and thirty cents, for new divisions to be organized during the year.

The amount to Central High School and Girls' Normal School has been increased, so that pupils can be supplied with all necessary books and stationery, the Board being unable heretofore to supply the same.

They therefore offer the following resolutions:

Resolved, That the Secretary of the Board be requested to furnish the principal of each school in this district with a price list of the supplies furnished by the Board, and a copy of the plan of distribution as adopted.

Resolved, That the principals be notified to order supplies not oftener than once a month, and not to order before the summer vacation more than two-thirds of the quantity to which their schools are entitled, and all orders must be in before the *first day of December*.

Resolved That the principal of each school be directed to keep a detailed account of all supplies received from this office.

Resolved, That the principals of the several schools of each section be directed to send all orders for supplies to the *Principal of the Boys' Grammar School*, so that orders for each section shall be received at the office at the same time.

INDIVIDUAL TEACHING.

EVERY teacher is aware that while much may be gained, something, at least, must be lost by teaching pupils in classes. The advantages of imparting instruction to children singly, or in small classes and at home, are well set forth in the following extracts from a paper by B. D. Pettengill, of Philadelphia, on "Home Education for Deaf-Mutes," recently published in the American Annals of the Deaf and Dumb. Let the argument be read and answered:

Nature evidently intended that children and youth should be educated around the domestic hearth at the family home. Says that eminent French writer on education, St. Marc Girardin: "I believe that in the paternal house alone can any education be found; colleges give instruction, but they cannot give education." A school for young children, in my opinion, is rightly constituted and likely to subserve the end of its establishment, just in proportion as it conforms to its prototype—the well-ordered family. If we accept the family as the model school, it settles some

disputed questions in education, and establishes the principles, first, that both male and female teachers should be employed--females especially—in the more tender years; second, that girls and boys should be trained together; third, that the monitor system is a good one, the elder pupils assisting in the education of the younger; and, fourth, that each individual pupil should receive especial instruction according to his personal requirements, peculiar deficiencies, particular gifts and prospective work, and not be taught in large classes.

Large schools, where young children are taught in large classes, are simply provisional arrangements, or make-shifts, to supply cheaply, as well as may be, the defects of an abnormal and imperfect state of society. Parents, from incompetency or want of leisure, being unable to attend to the intellectual development and training of their children, this duty of theirs is entrusted to other hands, and their children are sent abroad to public schools to be taught in large classes. In these classes, however well assorted the pupils may have been supposed to be, there are no two members whose minds are in precisely the same state of development and improvement, or whose various faculties are in the same power and activity. The same tasks being given to all, they are too short for some of the pupils, and too long for others, and in the teacher's general instructions and explanations the ideas brought before the pupils are likely to be too difficult for the apprehension of some and too obvious for that of others. As a consequence, in the general progress of the class, some of the pupils are hurried on to an advanced point in their studies before they fully comprehend the elementary principles, whilst others are retarded in their progress who might have made more rapid advancement. The result is, with those who are hurried on too rapidly, that they acquire a distaste for the studies they are pursuing, and fail to master them, although fully competent to do so had sufficient time been given them.

What the learned Pundits of India think of the effect of instruction by classes may be learned from the following extract from an article in *Scribner's Monthly*: "With the Hindoos of antiquity (says the writer), the universal rule was for a teacher to restrict his care to a single pupil; at all events, to one pupil at a time. For many generations, however, Hindoo students have studied in classes; and I have heard Pundits attribute to this mode of study, from its inferiority to that of former days, the comparative superficialness of their modern scholarships. There is no doubt concerning superficialness so frankly acknowledged, and the reason alleged for it must be to some extent the true one."

A writer on education in *Chambers' Encyclopædia*, in speaking of the schools in America, says: "The schools in towns are all graded The usual number of pupils allotted to a teacher in the primary schools is about fifty, in the grammar schools about thirty-five. The system of grading is a cheap system, because it enables the teacher to take charge of a large number of pupils; but it is said to lead to a want of thoroughness in the instruction, the teaching being addressed to the class rather than to the individual members of it. Want of thoroughness in the instruction seems, indeed, the besetting sin of American teaching, which aims too much at communicating knowledge—not sufficiently at developing capacities."

In England, the education of youth by their parents, or by private tutors is much more common than in this country; some of the greatest men of that country were educated by this method—Herbert Spencer and John Stuart Mill, for example. Home education is much better adapted to the development of genius than a public one. Indeed, a school or college education tends directly toward repressing genius and to making all the pupils resemble each other in their intellectual and moral character and habits. Bulwer, in his "Caxtons," mentions the case of a boy who exhibited such remarkable precocity of intellect as to alarm his friends for his health. To check the activity of his mind he was sent to school. That remedy proved effectual, and he soon became as great a dunce as other boys. Stuart Mill, in his essay on Liberty, says: "Human nature is not a machine to be built after a model and set to do exactly the work prescribed for it, but a tree, which requires to grow and develop itself on all sides, according to the tendency of the inward forces which make it a living thing." The English universities do not commit the error, so common in our American Colleges, of relying entirely on class training for the education of their scholars. A writer in the *Old and New* magazine, says: "No better and more satisfactory method for the practical business of teaching the classics and mathematics has ever been hit upon than that of the best private tutors in the English Universities. One of these gentlemen takes perhaps four pupils. He meets each pupil separately for an hour each day. They sit at the same table. The pupil does his work under the teacher's eye. They study together. The interest and life of the teacher quickens the pupil. He shows the pupil the best ways of study. On leaving, he gives him directions for his private study. At some other hour of the day he meets all his pupils together, and they work together for an hour. The teacher is thus able to consider the personal need of each pupil, and to give him the full advantage of such consideration. The pupil is able to ask the teacher just what he wants, and to show him just what are his difficulties. At the same time all the pupils meet together in study and recitation, compare notes, and go forward with the stimulus and sympathy of companionship."

How the system of large classes in our colleges works, may be gathered from the following extract from an article on education in the *North American Review*, by Prof. W. D. Whitney: "Our general systems of instruction by classes with established courses (says he) are at best only hit or-miss affairs. Many a pupil is spoiled both as a scholar and a man, whom a different treatment would have saved." He then goes on to specify the manner in which hereditary princes are educated as coming nearest to a perfect model.

Home, or a private education, was the original method of training up children and youth for the duties of after life. "In antiquity (says the *Encyclopædia*) education and instruction were entirely a domestic concern." It was by this method that the great orators, poets, writers, and artists, among the ancient Hebrews, Greeks, and Romans, had their minds developed and their genius fostered, and through which they became prepared to originate and execute those works which have been regarded as models of excellence by all succeeding ages. Schools where the attempt is made to give education to large classes and by unvarying curriculums are comparatively a modern invention. They are founded on the

assumption that a certain number of youth may be placed together for education whose minds are alike in their development and capacity, and whose educational needs are precisely alike; but as there are no such youth anywhere, the system always works more or less evil to all upon whom it is brought to bear, especially to geniuses, all persons of irregular minds, and to persons who, like the deaf and dumb, are deficient in some of the senses or faculties. These schools and classes, however, certainly in some respects answer some good purpose, where a better system is impracticable, and have the merit of cheapness; but to educate any youth in the best manner possible, the training and instruction must be addressed directly to the individual according to his particular disposition, capacities, and genius. Instruction which aims simply at communicating knowledge and furnishing the mind, may indeed be profitably given to classes consisting of as many persons as can see or hear the lecturer, but education aiming at the developing and training of the mind is in the strictest sense entirely a personal matter, and must be varied according to the specific wants fo the individual towards whom it is directed. Says that eminent writer, Isaac Taylor, of Ongar, the author of the "Natural History of Enthusiasm," in his work on "Home Education:" "A private education well devised, and carried into effect with constancy and energy, is the only one that altogether deserves the name in a philosopical sense. A school education may be as good as it can be under the circumstances, but home education may be good absolutely."

EXAMINATION IN CALIFORNIA.

THE following is a list of Examination Questions issued March, 1873, by the State Board of Education of California to the County Superintendents of the State. It is larger than we could desire, but affords greater variety of branches than most lists of its kind:

GRAMMAR.

One hundred Credits. Ten Questions, Eight Credits Each; Two Questions, Ten Credits Each.

Combine the following propositions into a complex sentence: The King of the Sandwich Islands is dead. It is desirable. Those islands are rich in their vegetable productions. Those islands are of importance to the commerce of the Pacific Ocean. Those islands should be annexed to the United States.

Change the following simple sentence into a compound sentence: The English being greatly exhausted with toil and hunger marched to the river Tyne.

Change the following compound sentence, first into a complex sentence and then into a simple sentence: A crocodile of prodigious size infested the banks of the Nile and it spread desolation through all the neighboring country.

Punctuate the following sentences: (*a*) Paul Flemming buried himself in books in old dusty books alas (*b*) Stones grow vegetables grow and live animals grow live and feel (*c*) Down soothless insulter I trust not the tale (*d*) When fenelons library was on fire god be praised said he that it is not the dwelling of a poor man

Correct the syntax of the following: (*a*) Everybody buys what they want (*b*) A certain number of syllables connected form a foot (*c*) Such is the tone of manner of some teachers (*d*) Who do you dine with the three first days of next week (*e*) In france the peasantry goes barefooted and the middle sort make use of wooden shoes.

Unite the following statements into a simple sentence by making *a* and *b* adjective elements, and then into a complex sentence by making *a* and *b* adverbial elements: The caterpillar secretes itself in some hole. (*a*) It has several times changed its skin. (*b*) It has at length grown to its full size.

Express the sentence, "She lies down daily," in every tense in the indicative mood.

Make the following clause first the subject of a sentence, then the object: "That you cannot perform the task."

Make four sentences, showing as many different uses of the infinitive in a sentence.

The rainbow looks beautifully. Correct and explain the error.

[Two Questions, Ten Credits Each.]

Analyze the following sentence: Deterred by the frightful stories related of its inhabitants, ships never enter this bay.

Parse the italicized words in the following: She asked *to be introduced*. "*On, Stanley, on!*" were the last words of Marmion. Analyze the following: "I will not profess bravery," said he.

HISTORY OF UNITED STATES.

Fifty Credits; Ten Questions, Five Credits Each.

What were the important differences between the Articles of Confederation and the Constitution of the United States?

When and where did the first Colonial Congress meet? First Continental Congress? What was done in each?

What is done in case both the offices of President and Vice-President are vacant? May a President serve more than two terms?

What is required before an amendment becomes part of the Constitution? What is meant by a "writ of *habeas corpus?*"

What connection have the following names with American history: General Putnam? De Soto? Andros? Thomas Jefferson? Patrick Henry?

How and from whom did the United States obtain Florida? Louisiana? California?

Name four Colonial wars, and one important event in each. When and for what purpose was the first union of New Eng'and colonies formed?

Name first and last battles of the Revolution. Of the War of Secession. Two most important battles of War of 1812. State the results.

Name the principal victories won by Grant; Sherman; Sheridan; Lee; Farragut.

Mention an important event in Washington's administration; Lincoln's; Madison's. What is meant by the "Missouri Compromise."

GEOGRAPHY.

One Hundred Credits; Twenty Questions, Five Credits Each.

What is the largest lake west of the Mississippi River, and what tributary does it receive? Name an island north of Australia; one west of Italy; one west of Africa; one east of Asia, and one north of Europe. How do the latitude and climate of New York and Glasgow compare? What is taken

as a standard in measuring elevations and depressions of the earth's surface? To what race do the inhabitants of the Sandwich Islands belong? what their government? How do the rivers of Europe compare with those of America? give some reason for your statement. Which is the most densely populated country of Europe in proportion to its size? On what water are the following places situated: Portland (Oregon); Calcutta; Sydney; Liverpool; Pekin? Compare the productions of the Barbary States and France. What race inhabits South America? Where is there no Latitude? no Longitude? neither Latitude nor Longitude? Define Agriculture, and name a country largely engaged in its pursuit. What is the difference between domestic and foreign commerce? In the same Latitude, is a low or an elevated country colder? Name some one country possessing both of these conditions.

How would you teach the map questions in Geography? Of what value to Russia is Siberia? Name the bodies of water around the British Isles. What currents wash the eastern coast of the United States and Asia? Whence is the land supplied with fresh water? What city was the ancient capital of Russia? the present capital, and how situated?

ARITHMETIC.

One Hundred Credits; Ten Questions, Ten Credits Each.

Compound interest of $500 for 5 months, at 2 per cent. a month. Interest of $125, for one month 18 days, at ten per cent. a year. Note give for $100, June 10, 1871, rate of interest twelve per cent. a year. Paid on this note July 31, 1872, $75. Amount due March 1st, 1873? What is one-fourth of 5 miles, 5 rods, 5 feet, 5 inches? Analytical explanation of 25 multiplied by four-fifths, and the product divided by two-thirds. How many pens at ¼ of a cent each can be bought for $1,500? Analytical explanation of 1.25 divided by 8. A merchant sells silk at $4 a yard and gains twenty-five per cent.; what per cent would he gain if he sold it for $6 a yard? Bank discount of $500, from January 1st, 1873, to March 19th, 1873, at one and five-eighths per cent. a month. A broker received $1,575, to be invested in railroad shares at $50 a share; his commission of five per cent. to be deducted; how many shares did he buy?

ALGEBRA.

Reduce to its simplest form: $\{2a^2-(3ab-b^2)\}-\{a^2-(4ab+b^2)\}+\{2b^2-(a^2-ab.)\}$ Simplify $3(a-2x)^2+2(a-2x)(a+2x)+(3x-a)(3x+a)-(2a-3x)^2$. Divide x^3-7x-6 by $x-3$. Divide $a^{-\frac{1}{3}}$ by $a^{\frac{1}{3}}$. $a=1$, $b=\frac{2}{3}$, $x=7$, $y=8$. Find the value of $5(a-b)\sqrt[y]{\{(a+x)y^2\}}-b\sqrt{\{(a+x)y\}}+a$. $5x-6y+4z=15$. $7x+4y-3z=19$. $2x+y+6z=46$. Find values of x, y, z. Find square root of $4a^4-12a^3+25a^2-24a+16$. Factor $3a^2-2a-1$. Simplify $b\sqrt[3]{8^6b}+4a\sqrt[3]{a^3b^4}-\sqrt{125a^6b^4}$. The length of a rectangular field exceeds its breadth by one yard, and the area is 3 acres; find the length of the sides.

PHYSIOLOGY.

Fifty Credits; Ten Questions, Five Credits Each.

What is the really essential difference between animals and plants? and what do you understand by rational and irrational animals? Of what two parts is bone composed? and how can you obtain these parts separate from each other? Why is more saliva than usual needed when one is speaking? and what are the two kinds of fluids secreted by the salivary glands? Describe the arrangement of the digestive organs. What are the different parts of the apparatus of circulation? describe the agency of each in circulating the blood. Why are the ribs joined to the breast-bone by means of the cartilages? Whence comes the heat produced by exercise? Upon what does the rapidity of the change constantly going on in the body chiefly depend? and which has the most influence on this change, mental or bodily labor? What part of the nervous system is most immediately essential to the continuance of life? why? illustrate. What is there in the shape of the spinal column that acts as a safeguard against shocks to the brain?

NATURAL HISTORY.

Fifty Credits; Ten Questions, Five Credits Each.

What different branches of the Natural Sciences constitute Natural History? Name the different parts of a leaf. Name a plant or two, having net-veined leaves, and also one or two, having parallel-veined leaves. What is the difference between a feathered-veined and a palmate-veined leaf? Illustrate by sketches. Mention four different terms describing the margins of leaves, and illustrate the same. Mention two different terms or words, describing the base of a leaf, and illustrate the same. Name four different terms or words used in describing the shapes of leaves and illustrate the same. What is the difference between a simple and a compound leaf? Name the different parts of a compound leaf. Name the component parts of a plant.

THEORY AND PRACTICE OF TEACHING.

Fifty Credits; Ten Questions, Five Credits Each.

Give a brief outline of a lesson in local geography, to a class of beginners. Name four practical exercises, independent of the text-book, for training a class in Grammar. Explain to a first grade class why the polar circles are 23½ degrees from the poles, and the tropics are 23½ degrees from the equator. Explain to a first grade class, the analytical method of dividing $\frac{8}{9}$ by $\frac{2}{3}$. How would you proceed to introduce drawing into an ungraded school? In teaching arithmetic, what are the arguments in favor of keeping children for the first year at school on numbers less than ten, and of teaching them, at the same time, addition, subtraction, multiplication and division? How can you train the perceptive faculties in teaching arithmetic? What are the qualities or properties of iron? Write a composition consisting of five sentences, on "Cotton." Explain to a fifth grade class the analytic method of dividing 539 by 4.

MUSIC.

Twenty-five Credits; Five Questions, Five Credits Each.

Write four measures in quadruple time, with no two measures exactly alike in number of notes, introducing three kinds of rests. What notes are sharped in the key of A? Write upon a single staff, with G clef, five measures; signature, two sharps; "three-four" time. Write upon a single staff, F clef, key of C, five measures; "three-two" time. Put in notes upon a staff, with the signature of two sharps in triple measure, the following: do, re, mi | re, mi, fa | sol | sol | la | sol | fa, mi, re | do ‖.

COMPOSITION—25 CREDITS.

One credit off for each mistake in spelling, punctuation or the use of capitals.

Write a short composition on one of the following subjects, dividing the subjects into heads, before composing: Chinese labor, The systems of public and private teaching compared, Refractory pupils and their management, Louis Napoleon, Among the trees, School friendships, What I like to study.

THE INTELLECT OF OLD AGE.

TRY an old, very old, gardener of your acquaintance with a new plant, and the new method of bedding-out old plants, and see the way his mind opens in the one case and shuts in the other; how easily the mass of new facts, involved in a new plant, facts of color and shape, and cultivation, and pedigree are absorbed, while the new ideas fall back like flies from a painted peach. What is the cause of the difference? There is not the faintest reason for supposing that the mind is compartmented as to the things it can receive, and that the compartment for fact, the mental bin No. 1, is open longer than the compartment for abstract ideas. That is almost impossible from the close relation between abstract and concrete ideas, and is disproved by a quantity of evidence, such as the readiness with which old men receive those ideas which are to them facts, with which old barristers swallow new laws, or old mathematicians new problems, or old astronomers new discoveries, like the spectrum. It is scarcely conceivable, again, that the whole mind should grow old, the mind being immaterial, though the medium by which it works may age, and, it is conceivable, may in aging retain receptivity for one kind of food rather than another. The most probable theory is that it is not the mind properly so-called, which alters in age, but the will which becomes weaker, and allows the mind to remain closed to all it has not become habituated to receive. The habit as regards facts is of course never out of use while we live, new facts pressing on us with every turn of our heads; but the mind may, as regards ideas, get rusty and stiff, till the exertion required of the will to move it becomes a pain from which we instinctively shrink. Many old men are conscious that this is the case, and shrink from the labor and pain of receiving new vivifying thought just as wilfully or consciously as they shrink from the labor and pain of a new undertaking, or a new journey, or, in extreme cases, of a new doing of any sort. M. Thiers avows, it is said, that this is his mental position towards the great group of ideas described on the continent as "the Church;" Lord Palmerston allowed that it was his in relation to scientific truth; and it is constantly admitted by old men when speaking of theological speculations. They know that their minds could act, but draw back from unaccustomed toil. It is evidence from this view that under unusual excitement, or necessity, or pressure of any sort, the old frequently develop a momentary receptivity, or become as receptive of new ideas of some one kind as if they were still young, a process often observed in very old statesmen and kings, and other persons under intense responsibility. The will in such cases is reinvigorated, and compels the mind to act, as from disuse or old habit, it is disinclined to do, but as it always, but for unwillingness, retained the power of doing. If, for example, circumstances of any sort convinced M. Thiers that he *must* comprehend, and, so to speak, receive Bastiat's writings, he could do it, though when the necessity is not upon him, that feat seems so completely beyond his mental power. The irritability which sometimes marks old age proceeds, we take it, from just the same cause—a failure in the will, which in its strength restrains the impulse towards querulousness which in its weakness becomes so manifest to the observer.

It would follow from what we have said, that, if the memory keeps perfect, a point which appears to depend entirely upon physical conditions—the memory, for instance, growing bright as to the incidents of childhood when it grows dull as to what happened yesterday—there is no reason why, as regards anything but new abstract ideas, the mind in old age should be less strong than the mind of maturity, though it may have more difficulty in using the medium through which it works; and we find this constantly to be the case. Very old generals, like Radetzky, have commanded victorious armies; very old statesmen, like Palmerston, have guided parties successfully; and very old orators, like M. Thiers, are often strangely eloquent. It would be almost impossible to show that for oratorical purposes his mind has aged at all, that he has lost any one of those powers which go to create oratorical success, unless it be (and we should doubt that) the acuteness of his sensibility to the mental atmosphere around him. We are accustomed to speak of Lyndhurst's later efforts as wonders, and so they were as physical efforts; but there is nothing in old age to make a man less capable of reviewing the facts of the year by his old lights with all the eloquence, and bitterness, and epigrammatic terseness that he ever possessed. The Duke of Wellington in extreme age became impervious to the ideas of his day, and showed a strong indisposition toward new men, even in the army; but there is no proof whatever that if England had been invaded by the kind of army he was accustomed to defeat, he would not have displayed all his ancient generalship. He would have received all the new facts about numbers, equipment, and the like, as M. Thiers receives the new facts about revenue and expenditure, and would have applied the old principles as successfully as ever. Nothing would have gone from him except strength of will to compel the mind to perform an unusual and disagreeable task. Von Moltke is as great a general as ever he was, is able even to develop his own knowledge by the addition of a system of railway strategy; it is only when asked to consider a new scheme of discipline that his mind closes, and he shows himself unable to follow any idea except that of severe punishment.

We say "nothing" has gone, because we wish to put our argument strongly; but we say it with a reserve as to the possibilities connected with the little understood faculty of mental accumulation. There may be something material about that, as about memory, for we know very little of the circumstances which affect it—which suspend its action, for example, in the Greek, while the Jew, who is "older" than he, seems to possess an increased quantity—and one or these circumstances may, as regards the individual, be old age. That the faculty is separate from memory is clear from its non-existence in animals, which have very keen memories; but it may have a very intimate relation to it, and may be subject, like the memory, to conditions almost entirely physical. This, however, is a mere suggestion *en passant*.—*Spectator*.

NOTES ON ETYMOLOGY.

BY S. S. HALDEMAN.

THE excellent article on etymology in the PENNSYLVANIA SCHOOL JOURNAL (April, 1874), leads me to wish that writers as familiar with the subject as the reverend author, would give further selections from their materials. The ordinary compilers are ignorant of analysis, and of the laws which regulate the interchange of vocal sounds, and they present many erroneous explanations, even in plain cases where the dictionaries give the necessary information. For example, the veterans, Sanders and McElligott, see "petal, a flower-leaf," in "centripetal, seeking or tending toward the centre." Here, as *sound and sense must concur*, their definition should have taught them that PET of centripet-al must have some meaning like *seek*, a meaning which belongs to the Latin PET-O; and CENTRUM (although taken from Greek *kentron*) is Latin in "centripetal," as shown by the *i* sound, where a Greek form would be *centro*. Pet-al (*pet al on*) as part of a flower, is a *Greek noun*, and "centripetal" being an *adjective* with the *Latin* adjectival -al (-AL-IS), there was sufficient indication that the word was formed on a Latin basis.

In scientific etymology there must be a correspondence between the sound and the radical meaning, subject to the laws of speech. There is not an element in common between "cap-" (of cap-tain) and "chief," yet the latter is deducible from the former, the meanings correspond, and, independently of the prefix, "e-raser" and "razor" are alike.

The dictum that "apparent resemblance proves real difference in actual affinities," cannot be admitted, except in explained examples, for *how* can an accidental resemblance like Tamil "wona" with English "one," demonstrate a difference? And yet, when correctly stated, there are cases to which the dictum will apply. A kind of violent storm is named "typhoon," from the single Greek word "*typh-ôn*" the noun suffix becoming "-oon" in English, as in going from Spanish "serón" to English "ceroon." "Typhoon" is also in use in the Asiatic seas—the same vocable with the same meaning, but not the same *radical* meaning; for, being without an equivalent for the noun suffix of "typhôn," *the law of its construction* is different, the Chinese original being "tyfong," from "tî," *great*, and "foong," *wind*.

A prominent philologist has sent forth the wild assertion that "similarity, whether of sound or meaning, is of no importance whatever"—*no importance whatever!* If this is true, the etymologist need not know the sound of a single Russian letter to enable him to determine whether the Russians get their name *Krum* for *Crete*, from Turkish, Arabic, Armenian or other language; nor need he know a single element of the Chinese word for "France" (written with three characters, which we may represent by ⁂¶) to decide whether it is based on the European word, or on a peculiarity of Frenchmen, like that which has given them the appellation of wîwî in some of the Pacific Islands, from "oui," *yes*. Compare "Languedoc," the region of the "Langue d'oc," *language of oc*, or where "*oc*" was used for *yes*.

The two Scotch names "Alec" and "Sandy" are parts of "Alexander," and altho' the latter would not have existed without the former, it is not derived from it; and in case the root PLIC were to be lost from "replication," the resulting "re-ation" would not be a derivative from it, because re-, -at and -ion are independent affixes, and one or more of them might be older than PLIC. Consequently, altho' the fragments of a prefix and a suffix are preserved in the French word "même" (self), which were formerly attached to Latin IPSE, it is incorrect to say that they "are the same and can be traced to the same root by a logical process concerning which there is no possibility of a shadow of doubt."

In a parallel case, we may say that "prison" is derived from "prehension," but *not* from the root HEN; for as pri- and -son of "pri-son" are derived from pre- and -sion of "pre-hen-sion," neither part can be derived from the root HEN, which means *seize*, while pre- means *before*. The superlative sign -me (as in pri-me), is present in the French "mê-me" to enforce it, as in "la chose même" (the *very thing*, the thing *itself*). The longer Italian form is med-es-im-o, referred by Diez to Latin SEMETIPSISSIMUS (se-met-ips iss-im-us) which has the strengthening pronominal "MET" or "SE MET,"—represented by mê- of mê-me. "IPS- of "IPSE," fem. "IPSA," neuter, "IPSUM," *this* (person or thing) is not a root, but an enforced form of *i-s*, neut. *i-d*, *this*, *that*. Here, too, the roots of mê me may be older than the root of IPSE, with which they have nothing in common.

"Wig" is sometimes cited as derived from PIL-US' *hair*, which gave Spanish "pel-uca," Ital., "perr uca," Fr. "perr uque," Eng., "per uke" and "perr i wig"—the suffix of which remains in "wig," which represents the Romanic argumentative -uc a, derived from Latin UC- of cad-uc-ous, where it is without augmenting power.

"God" has a cognate in the Persian khudâ (God, master, owner,) which Francis Johnson, in his Persian Dictionary, derives from "khwud," *self*, ây, *coming*,—giving also "khudây," as *self existent*.

"Page," (a boy) from Greek *paidion*, does not prove that "sound has little to do with etymology." On the contrary, as English makes little use of suffixes indicative of gender and case, if we reject *on* we get the modern Greek from "*paidi*," (with English *ai*), but the sound of "i" may turn to that of English "j," or to French "j" (zh), which would trans. form "*paidi*" into "paidj"—a more "etymologic" spelling than "page." But most spellers will spell "sound" from *sane*, and "sound" from *son*(orous) in the same manner; and when the "mantle" of a chimney is intended, they return to the original spelling "mantel."

The supposed derivation of Latin LUCUS, a *grove*, from LUC-EO (=loo'kay-o), *to shine*, *to be clear*, is not far-fetched, because it applies to an open wood, or a glade admitting light, while SILVA (=seel-wa) is applicable to any forest.

This history of words is an important aid in etymology, as in showing that "Altoona" in Pennsylvania has nothing to do with "Altona" in Europe; but as words are ante-historic, they are much used to determine points of history, and it is probable that the etymologist is more useful to the historian than the latter is to the former.

Chickis, Lancaster co., Pa., April 14, 1874.

OH, books, ye monuments of mind, concrete wisdom of the wisest;
Sweet solaces of daily life, proofs and results of immortality;
Trees yielding all fruits, whose leaves are for the healing of the nations;
Groves of knowledge, where all my eat nor fear a flaming sword.

EDITORIAL DEPARTMENT.

THE SCHOOL JOURNAL.

LANCASTER, MAY, 1874.

J. P. WICKERSHAM. . . . . J. P. M'CASKEY.

THE meeting of the State Teachers' Association at Shippensburg, in August next seems already to be attracting considerable attention. From what we learn, leading teachers from all sections of the state will be present. The energetic chairman of the Executive Committee, seconded by the other members, has been busy with his preparations for the meeting almost from the day the last meeting adjourned, and they are now well advanced, as the following partial programme will show:

PROGRAMME.

The Executive Committee of the State Teachers' Association have made engagements with the following distinguished educators, who will take part in the exercises of the convention which meets at Shippensburg Normal School on the second Tuesday in August. Other names, together with the programme of the Association, will appear in the next number of THE JOURNAL:

Dr. Geo. P. Hays, President of Washington College—*The Money Value of Education.*

Chancellor Woods, President of Western University, Pittsburgh—*Technical Education.*

Hon. J. P. Wickersham, State Superintendent of Schools, Pa.—*Education Under the New Constitution.*

Prof. Hines, of Dickinson College—A Scientific Lecture (subject not received).

Prof. Andrew Burtt, Pittsburgh—*The Thought of the Age.*

Miss Laura Parsons, Shippensburg—*Object Teaching.*

Prof. J. W. Shoemaker, Philadelphia—*Vocal Culture in Our Public Schools.*

Prof. T. Jeff. Duncan, Pittsburgh—*The Relation of Language to Thought.*

Prof. J. Willis Westlake, Millersville Normal School—*The Importance of Literary Culture.*

Prof. B. F. Shaub, Lancaster—*Local Supervision of Schools.*

Prof. M. N. Horton, Williamsport, Pa—*High Schools—their place in a system of Public Instruction—the need of State Aid for the same.*

Miss H. L. D. Potter, Boston—Lecture (subject not reported).

Prof. J. M. Bell, Kishacoquillas—*The Wants of Our Schools.*

Prof. H. C. Bosley, Titusville—*School Organization.*

D. E. Kast, Mechanicsburg—*Standard Qualifications of Teachers.*

Prof. Robt Curry, State Educational Department—*Geometry, and How to Teach it.*

JAMES L. HARRISON,
Chairman Ex. Com., Pittsburgh, Pa.

THE experiment of sewing in the Boston Public Schools generally, will probably be tried. Since October sewing has been taught to the 1,200 girls in the Winthrop School, and with great success. Two hours each week are devoted to this study. Each class receives separate instruction suited to its advancement, and consequently all grades of work are carried on, from hemming a pocket handkerchief to cutting out and fitting a dress. In teaching cutting, the pattern is drawn upon the blackboard and the several measurements are given, and each girl copies them in her drawing book. Each pupil is allowed to work for herself, and as there are some whose parents are unable to furnish the material, several churches have contributed.

WHEN Pennsylvania, in 1854, enacted the law providing for the election of county superintendents, few if any states had a similar law in force. Now thirty-two out of the thirty-seven states have county superintendents or other officers, with similar duties, as follows: Alabama, Arkansas, California, Connecticut, Florida, Georgia, Illinois, Iowa, Indiana, Kansas, Kentucky, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, Nevada, New York, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, West Virginia, Wisconsin.

PRESIDENT ANGELL, of Michigan University, seems to be well pleased with the results of co-education as it exists in that institution. In his late report he says:

The history of our work during the past year has only deepened the impression made during the two previous years as to the entire practicability of imparting collegiate and professional education to the two sexes in the schools. If any have cherished a fear that the admission of women would tend to reduce the standard of work in the University, their attention may be directed to the fact that during the last three years we have been steadily increasing the requirements for admission and broadening the range of studies. Now, certainly, the women experience no such difficulty in acquiring the studies assigned in the regular curriculum as to call for any modification of the course on their account. Their record in all branches is as creditable as that of their classmates of the other sex. Nor do I see any evidence that their success in their intellectual pursuits is purchased at the expense of health. On the contrary, I doubt if an equal number of young women in any other pur-

suit of life have been in better health during the year. I am persuaded that, with ordinary care and prudence, any one of our courses of study may be completed by a young woman of fair ability, without undue draft upon her strength. None of the many objections which are still raised against the co-education of the sexes have thus far been found in practice here to have any force. The admission of women has led to no new difficulties or embarrassment in the administration of the institution. It has certainly brought to a large class the benefits of such an education as otherwise would have been out of their reach, and has awakened through the state and country, and even in foreign lands, a new interest in the University.

OUR readers have not forgotten the valuable articles contributed to this JOURNAL a year or two since by Mr. Gilbert Butler, then of this state, but now of Idaho Territory. The movement in favor of the establishment of a Mechanics' High School has drawn from his pen in his far-off home, a paper on "The Alphabet of Technical Education." It comes to us at a fit time, and will be read with much interest. In a private note, Mr. Butler says: "All schemes of Technical Education will be utterly useless, unless built on Drawing in the Common Schools." This is our own conviction, and the conviction of the Board of Trustees of the proposed Mechanics' High School. We shall first attempt to lay this foundation. Our readers may expect at an early day an article from Mr. Butler, outlining a scheme for instructing the teachers now engaged in our public schools in the art of drawing to the extent needed to enable them, in turn, to instruct their pupils.

ARE we not pushing too far in teaching, the idea of *thoroughness?* "Not how much, but how well," is a good educational maxim but if applied literally harm will be sure to grow out of it, especially with young pupils. Is it in accordance with what is known of the laws of mental growth or the laws which control the acquisition of knowledge that a child must be taught all that is known concerning each branch of study as he proceeds with the learning of it? If rightly taught, a child may commence the study of Grammar or of lessons in language at a very early age; should he be made, can he be made, to dig down to the very bottom of the subject as he proceeds? No one acquainted with the mental powers of a child, no one acquainted with the science of language, will answer the question in the affirmative. Grammar is no exception among branches of instruction, and it becomes obvious that thorough, through and through teaching in the case of the young is impossible. But is not much time lost in the attempt to be thorough? Are teachers conscious that their hardest work, their most trying failures, come from an effort to teach their young pupils what they have no power to learn? And would it not be vastly better to instruct them in the elementary parts of a larger number of branches and allow them to wait for a knowledge of the deeper principles of these branches, until their minds shall be more mature? In other words, must not little children gather knowledge from the *surface* of the several sciences, and be taught to wait in patience until the strength of years enables them to penetrate to and comprehend the broader principles that lie far beneath the surface? If all this is true, is it best, at all times, to be thorough in teaching?

TEACHERS everywhere find it difficult to furnish reading exercises to children sufficient in number and variety. Second and third readers are read through by many children in a few lessons, or in advance of the lessons, and the selections in them ever after lose their freshness and the reading is apt to become dull and monotonous. This fact has no doubt led to the multiplication of the books composing the several series of readers in general use, thus increasing the cost of text-books without doing very much to diminish the evil. Those who have observed the improvement in reading and *thinking* made by children who are allowed the use of a magazine adapted to their capacity and taste have no doubt often questioned whether reading matter, in freshness, variety, and adaptation to the youthful mind, like that contained in our best magazines for boys and girls, might not be instituted for the comparatively dry text-books of our primary schools. A few teachers have introduced *The Nursery, The Children's Friend, The Youth's Companion, The Young Folks* and other similar publications, but in the end have found the expense too heavy. An effort is now being made to meet this want in a somewhat different way. Messrs. Geo. E. Stevens & Co., of Cincinnati, Ohio, have commenced under the title of "*School and Home*," the publication of a series of reading papers for children in the Second and Third Reader Grades. Each paper consists of four pages of interesting reading matter, prose and verse, riddles and rebuses, and exercises in punctuation, in the use of capital letters, etc., etc. The design is to use these papers

in connection with suitable text-books; a new number being given to each pupil every Monday morning. The preparation of the papers is in the hands of Miss Delia A. Lathrop, one of the most accomplished teachers of the West, and well-known to our readers.

Mr. J. G. HOLLAND, on assuming the presidency of the board of public instruction of the city of New York, made an address, from which we take this extract: "I believe in public schools. I believe that there is no other agency in our civilization equally potential in producing that homogeneity of character, ideas, sympathies and sentiments, which must be secured before we can become a solid and consistent people. It is in them that the rich learn respect for the poor, and the poor learn self-respect. It is in them that class distinctions become softened in their outlines, that sectarianism loses its paltry prejudices, and that character wins its first and most suggestive achievements." These are significant words, well worthy the thoughtful consideration of every patriot. We are a conglomerate people. There are now on our soil at least four of the great races into which mankind has been divided, viz: the white, black, yellow and red. Then the predominating white race is composed of a great number of distinct nationalities. The blood of every nation in Europe is mixed and mixing with ours: and every year brings its tide of emigration, consisting of hundreds of thousands of human beings, to our shores. Party prejudices among us are strong, and religious denominations may be counted by hundreds. Besides, we have the rich and the poor, the high and the low, the capitalist and the working man, with all the clashing interests that arise therefrom. Considering the different materials of which the nation is composed and the antagonistic forces that are lodged in its bosom, one is apt to conclude that sooner or later must come disruption and disintegration. And in all soberness we are of the opinion that without our public school systems to mold our heterogeneous social elements in one "solid and consistent" whole, there would exist no force strong enough to prevent our falling to pieces.

A SCHOOL FOR A VILLAGE.

WE have received the following note from an "Inquirer" living in one of the two or three hundred pleasant villages of Pennsylvania:

MR. EDITOR: Our town is a borough, but it contains only a population of about 500. We are not as far advanced, educationally, as we ought to be, and I write to you for advice. Will you give me a brief description of the kind of school we ought to have? and in addition, what other means of intellectual improvement would you suggest? Our grown-up people, like those of other places of the size of ours, seem to have a great deal of idle time, which I believe might be turned to better account if we knew how to do it. Can you help us?

Yours respectfully,

INQUIRER.

REPLY.—First of all, you want a good school-house pleasantly located. The school-house ought to be the most attractive house in the town. There need not be about it much that is purely ornamental, but it should be inside and outside neat and in good taste. It should be a thing that little children can love when pupils, and continue to love more and more when grown to be men and women. A good school-house for your town will cost, perhaps, ten thousand dollars; but the money paid for it will not be lost, but loaned. Build one, and the increased value of your property will more than pay for it. A good school-house is always a paying investment.

Be careful to locate your school-house where it can have attached to it large play and pleasure grounds. These are indispensable to a village school of the best sort. Make these grounds, if possible, large enough to constitute a village park. Lay them out in walks, plant them with trees and shrubbery, have if you can a fountain or two and a few pieces of statuary, place seats at convenient points under the shade trees, and invite all the villagers to spend some hours of their holidays and their summer evenings in their enjoyment. Your town, I know, can do this with a little effort.

But you want a good school more than a good school-house and pleasant school grounds. To obtain this, you must procure the services of well-qualified teachers. These are scarce; if you find them, pay them well and show them all kindness; for the future of your village will be in their hands. The whole school should be carefully graded from top to bottom. Perhaps, in your case, a division of them should be made into nine or twelve sections, three or four to each room and to each teacher. A well-arranged course of study should be provided, including a number of the higher branches of an English education. There is no reason why you should not have at M——, a good free academy. Establish a high school department, and it will attract pupils from outside of your district who will gladly pay tuition fees.

Visit your school. Have others visit it. The school is the village garden where its young minds are growing, its young hearts are strengthening; go and see that the soil is well tilled and that no ruthless worm destroy the tender plants or hungry weeds suck away their nourishment. Go, though you neglect house and shop and office and store and farm; for the intellectual and moral welfare of your children concerns you more than all of these.

Make your school the centre of intellec

tual interest in the village. Encourage the teachers to have examinations and other public exercises. Resolve the older pupils into a literary society, and make it the nucleus for a village lyceum that shall attract all, young and old, and interest them in its proceedings. You can have, if you like, a good course of lectures every winter. You will be unable to pay five hundred or even one hundred dollars a night; but you can procure a number of good lecturers in your own county by paying their expenses.

Out of all this, we trust, will grow a library and reading room, and by their means the whole village be lifted up to a higher intellectual and moral level.

OUR COUNTRY SCHOOLS.

HOUSES AND LANDS FOR TEACHERS.

THE *Lebanon Advertiser* of March 25th contains a lengthy editorial discussing the means of improving schools and teachers. The editor, Wm. M. Breslin, Esq., is a school director and a warm friend of education, and his views, therefore, deserve due consideration. He is of the opinion that the best way to make our school system more effective is for directors to employ married teachers and to provide a house and lot for them near the school-house. In order that the arguments he presents on these points may have their full weight, we present them below almost entire:

Many of the evils connected with our school system, especially with country schools, arise from the fact that the teacher resorts to that business as a mere temporary expedient, without having any intention of devoting his time and energy to the profession as members of other professions do to theirs. One reason for this is because it is not so lucrative as other pursuits. In a pecuniary point of view, teaching offers but little attraction to single men, and scarcely any to married men. In fact, with the determination to marry usually comes the determination to seek some other employment. Owing to the limited accommodations for their own families of many farmers residing in the vicinity of school houses, a teacher for a country school finds it very often difficult to obtain an apartment for himself; and, of course, accommodations for married men and their familes, even if the salary would permit the employment of such a one, entirely preclude their employment. In many districts in Lebanon county, single teachers only are employed, or if those married are accepted, they must reside in the town or villages, and travel, morning and evening, miles to their schools, thus spending in traveling, through all kinds of weather, the precious hours which they should devote to improvement or recreation.

To remedy this, School Directors should engage married teachers, and for their accommodation there should be a cottage and a few acres of land adjacent to the school. The most obvious, but not the most important advantage arising from this plan, would be that people residing in the country could get their children educated much more cheaply than they could under the present system. Let us see how it can be done.

Many of the country schools have an average attendance of pupils varying from forty to sixty. They are of all degrees of proficiency, from the child learning the alphabet, to the young man studying algebra and geometry. No one will suppose that one teacher, no matter how well informed and energetic he may be, can do justice to a school like this. Each of these schools remains open about six months annually, and the teachers receive salaries varying from $40 to $70 per month. To meet the requirements of one of these schools, an assistant would be wanted. This would involve an outlay of $250 to $350 more; but an assistant is seldom engaged. Now, a cottage could be built and a few acres of land purchased for the use of the teacher, for say $1,200. If the Directors had to borrow this, the interest would be about $72 yearly. Next, let us suppose a gentleman, teaching a first grade country school, receives $70 per month for six months; and that a lady, receives $40 a month for the same time. For six months their united wages would amount to $660, out of which they would have to pay about $100 for board and lodging, leaving them a balance of $560. There would not be much probability of their teaching longer than six months annually. Indeed, the average length of time for which the country schools are kept open does not amount to six months. Well, these two, married and receiving only the salary of the male teacher, would, if they had a house and land free save more money than they could under the present system; while their cost to the township would be reduced. And even if they did not save so much money, many teachers would prefer the plan here suggested. As has been said, school teaching, at best, is not a lucrative pursuit. Many of the teachers, and especially those most likely to be successful educators, have not that greed for money which characterizes the members of most other professions. If they had they would have chosen some other vocation. What they like better is a life of retirement, in which they have opportunities for study and mental improvement; in which they are, to a great extent, free from the rivalry incidental to more active pursuits. Under these circumstances, teaching would, in reality, have much to render it attractive. Having a house of his own, the teacher would gradually and at little expense acquire a library, a museum, and philosophical instruments, from which both himself and pupils would derive much benefit and gratification. If there were residing in the neighborhood any persons whose tastes or pursuits were congenial to his own, he could invite them to his house, to their mutual pleasure and improvement.

Under the present system, the country teacher is usually a wanderer, coming no one knows whence, and going, at the expiration of his term, no one knows whither. This, of course, is as much his own fault as that of any one else; and on that account is likely to continue until he is induced to marry and make teaching the profession of his life. It is a well-known fact that the length of time any person retains a situation depends as much on his social

qualities as on his ability to perform the duties pertaining to his office. With a family, the teacher is much more apt to cultivate and practice the social virtues than if he were single. He becomes more closely identified with the wants and feelings of his neighbors. In addition to the resolve to do his duty which characterizes the action of every honest man, whether working for friends or strangers, the resolve to please would then become an important factor in his motives As a consequence, he makes more friends; his faults are viewed more leniently; and, to the advantage of himself and his pupils, his position becomes as permanent as that of the farmer whose children he educates.

Let us see how this plan would affect the teachers pecuniarily. We have supposed that two teachers will save $560 in six months. Out of this money they have to pay for their board during the remainder of the year. By the time they secure another engagement they have scarcely any money left. But if the teachers lived in their own houses, how different would be the result. For $600 the Directors could build a cottage that would afford two teachers much better accommodations than they could obtain from the neighboring farmers. For the remainder of the $1,200 they could purchase, according to locality, from three to ten acres of good land. The teacher could work on this land before and after school, on Saturdays and during the vacations. He could keep a cow, hogs and poultry; and the profit arising from these, added to the crops raised by his own labor, would be more than adequate to the support of himself and wife. The labors of the field would give zest to the labors of the school-room, afford the necessary bodily exercise to keep him in good health, and render him less liable to visit scenes of dissipation; so that at the end of the year he would not only be pecuniarily, but, what is more important, he would be physically, intellectually and morally better than he could be under the present system.

In marrying, he would choose a wife adapted to his wants, and capable of assisting him in the duties of the school-room. As her classes would be dismissed about two o'clock, she would have ample leisure to attend to household duties also. This would prove as pleasant and necessary an exercise for her, as labor in the field for her husband.

As a great many branches are required to be taught in public schools, the teacher can not now attain that degree of proficiency in each of them necessary to achieve the best results. Here his own knowledge and that of his wife would become supplementary to each other. In the higher branches he could become better educated than can the majority of the country teachers now; and she, having no occasion to teach these branches, would have opportunity to perfect herself in sewing, embroidery, music and drawing. By doing so, they could retain many pupils who are now sent out of the district in which their parents reside, to receive an education. Parents are all well aware that, in addition to the great expense, numerous evils result from sending their children away from home at too early an age, and regret the necessity that compels this. Yet the children are taught nothing at a boarding-school but what they can be taught in a country school, by two married teachers who would make a proper division of the labor.

Again, some parents who possess but a small share of that refinement which can be acquired only by mixing with educated ladies and gentlemen, but who are unwilling to see their children labor under the same disadvantage, send their boys and girls away from home solely on this account. It is nothing uncommon to hear them say that their girls have book education enough, but that they must send them where they can acquire good manners. A refined, educated lady and gentleman, who had mixed with the world and who were familiar with the manners and customs of the better class of society, could, when residing in their own house, do an amount of good that is simply incalculable. They could invite to their house not only their older pupils, but the young men and women of the vicinity; and by means of music, recitations and conversation, all could spend in a most pleasant and profitable manner the time that otherwise would be devoted, by some at least, to dissipation, or, at best, to frivolous gossip. At these reunions the teachers would have unparalleled opportunities of inculcating habits of order, neatness and industry; of cultivating the taste, and even of developing the moral faculties of their visitors.

We have taken this view of the subject first, because it is the one most easily understood by school directors; and because it requires but little money to carry it out. To sum up, its advantages over the present system are: 1. Where two teachers are engaged, a saving of several hundred dollars annually. 2. Teaching would become a more profitable and permanent pursuit, in consequence of which teachers would direct their best energies to the work of education. 3. There being a proper division of labor between the husband and wife, each becomes more proficient in certain branches than if no such division of labor prevailed 4. Teachers would be more desirous to retain their schools, and directors would be more desirous to retain their teachers.

WHAT LANCASTER NEEDS.

THE last stated meeting of the Lancaster Board of Trade was held April 14th. This is an organization of business men that gives promise of revolutionizing some things with us, and of directing public attention to others that greatly need to be looked after. The regular monthly report was read by our old friend, S. S. Rathvon, Esq., perhaps the leading entomologist in Pennsylvania, and one of the best specimens of the "self-made" man of our acquaintance. We transfer to the columns of *The Journal* the educational paragraphs of his report, as being of more than local interest. He says:

There is, however, no subject connected with the literary enterprise and intellectual progress of Lancaster city, that needs stimulation and liberal development more than that which relates to her public school establishment, and especially her High School buildings We would not counsel extravagance, or attach an undue importance to the outward forms and conveniences of our educational system, whilst we neglect the inner germ which gives life and character to the student; but we would, at the same time, impress a higher appreciation of our edu-

cational interests, and a more liberal management of our school affairs in general. In comparison with the school buildings now erected and in process of erection, even in our own county, our school houses are mere shells; temporary structures, with thin walls, and a uniformity of height and architectural style, adopted to meet the urgent temporary needs of our school system many years ago—cold in winter, and roasting ovens in summer.

The only two-story building in the city was originally designed for a "Lancasterian School," about fifty years ago. On the visit of General Lafayette to Lancaster, in 1824, this building was shown him as "Lancaster's pride." and really was a fine school building for that day. This is still the best school building we have in Lancaster city, but is far less credi able for a school house than those at Columbia and Mt. Joy, and almost infinitely inferior to many existing in other parts of the State. This is rather humiliating, because twenty-five years ago Lancaster city was in advance of almost every other town in the State of Pennsylvania; but since then she has moved along so slowly, and has been so morbidly cautious in her educational enterprises, that she has been far outstripped in the race by almost every city or important town in the State. The city has been running its schools so long on the cheap plan, that we think, now, she might afford a more creditable High School.

Not only a High School building, but also a High School campus, where, during recess and at the proper hours, the scholars might have opportunities to indulge in those recreative exercises so necessary in the development of a vigorous physical and mental constitution. Street exercises, under the most rigid rules and police restrictions, are always fraught with evil. Rational, healthy boyhood is always ardent and impulsive in its normal condition, and needs direction more than restriction. To entirely crush out the vital energy of a boy, is to destroy the fundamental elements of a proper manhood. Boys are neither angels nor demons, as a general thing; but they will be less of the one and more of the other, when, through mistaken systems of educational economy, they are unnecessarily cramped and curbed, and at the same time exposed to the barren recreations and evil temptations of the public streets.

We have a splendid "Temple of Justice," that for external architectural symmetry and internal economical arrangement is unsurpassed anywhere, and is a credit to the taste and liberality of the county. We have a Prison, which, so far as such a building may be necessary to the good order of society, is equally creditable. We have a Children's Home, which reflects the greatest credit upon the humanity of those who were instrumental in its conception, and in bringing it to its present condition. We have an efficient and well appointed Asylum for the unfortunate and insane; and we are about erecting an Almshouse, on a more liberal and improved plan than that which heretofore existed. But what are Court Houses, Prisons, Asylums and Al nshouses, but for the trial and punishment of crimes, and the alleviation of diseases and distresses, many of which may be the result of ignorance—the absence of a sound, effective education.

But, this is not all. We have a beautiful Opera House that is fully "abreast" with the present period anywhere; and in a few months we will have a magnificent hotel, which will be equal in its appointments, if not in size, to any in the Keystone State. We have Cotton Mills, and other manufactories which for perfection of machinery and quality of fabrics have an extensive reputation abroad. Add to these the beautiful and expensive private residences that are springing up in all eligible parts of the city, together with the liberal and tasteful improvements made in many of our business establishments, and it becomes manifest that Lancaster city (and county) has a "way" of doing things, as soon as she finds a "will" to do them.

Now all these things, and many others, are laudable and useful so far as they go; but, after all, they belong merely to the circumference of our social compact, and relate almost entirely to its material necessities.

We are unconsciously reversing the normal order of things. The school house, next to the church, constitutes, or ought to constitute, the centre or heart of society; because these institutions have an immediate relation to the human understanding and its enlightenment, and to the human will and its subordination and culture. It is true that other things may have a seeming priority in the order of time, as a proper material foundation; but of what moral value is such a foundation, if it is never to be the base of a mental or intellectual superstructure? Of what value are religion and education themselves, if they are forever to occupy a servile or secondary position in human affairs? The cost of a new high school building need not be disproportioned to the material means of the community requiring or demanding it; neither need the necessary expense incurred be immediately paid by increased taxation—except, perhaps provision to meet accruing interests on the original debt.

It seems to us that if ever any public institution, either civil, literary or religious, was justifiable in creating a debt for the purpose of improving and rendering more efficient the physical and intellectual condition of its subjects, the Board of School Directors would be justifiable in making a liberal provision for a new high-school building. We believe that monied men would as soon invest their funds in public school bonds as any other class of securities in the market.

Although we would not dictate to this Board the course it ought to pursue on a question of this character, yet we believe it ought to express a sentiment in sympathy with any efforts made in the School Board looking to the realization of an object so long and ardently desired by the friends of progressive education in Lancaster city, and who, against their own wills, are compelled to share the responsibility for the present defective educational order of things.

What the qualifications of our teachers are; what the order of their schools; what their *curricula*. and what the character of their pupils—are questions that must rest, respectively, upon their own merits. The single idea involved in these remarks has special reference to the enlarged and improved domiciliation of our public schools; and how do they compare with the general educational progress of the present period? If Lancaster city were now suddenly overwhelmed in a shower of lava, and exhumed again eighteen centuries hence, how would her educational and literary temples compare with others of a contemporaneous period? How would they compare with our magnificently embellished saloons of different kinds, in which—aside from their necessity—is seemingly inculcated the single ideal, that men merely live to eat? Claiming your indulgence for

this echo of the sentiment of a large class in this community, we therefore feel that we have not said too much.

Wm. A. Atlee, Esq., in moving the adoption of the report, alluded in gratifying terms to Mr. Rathvon's excellent report, and especially to the want of proper school accommodations. He offered the following resolution:

Resolved, That in the opinion of the Board of Trade, the educational interests of the city of Lancaster demand the erection of a proper high school building.

Mr. A. H. Peacock heartily seconded the adoption of the report and resolution, and in general terms contrasted the schools of Reading and other places, greatly to the credit of the latter, not so much in the character of the schools as in the excellence of her school buildings and school accommodations.

The resolution and report were unanimously adopted.

THE CENTENNIAL EXPOSITION.

The Secretary of State has informed the Commission that the governments of the following countries have officially communicated their decision to participate in the Exhibition, viz.: The German Empire, The Netherlands, Belgium, Mexico, Ecuador and Hayti. We take the following from the Philadelphia *Ledger*:

The Secretary of State has made known the gratifying fact that Prince Bismarck, the Chancellor of that Empire, in communicating printed copies of the communications of this government on the subject, to the German Parliament, recommended a participation in the Exhibition, and provisions for the appointment of a commission for each state of the Empire, as well as a plenipotentiary to reside at Philadelphia until the close of the Exhibition. The Republic of Ecuador has not only accepted, but has already appointed a commissioner resident, who has presented his credentials at Philadelphia. A despatch received from the Hon. George P. Marsh, through the Department of State, gives reason for the belief that the Kingdom of Italy will add to the attractions of the Exhibition by a display of specimens of the treasures of art and manufactures for which that kingdom is so justly celebrated. From despatches received from the United States Minister at Vienna, the belief is entertained that the Austro-Hungarian Empire will be conspicuously represented in our Exhibition by the extent, variety and excellence of her products. It should be remembered that the proposed Exhibition is, by act of Congress authorizing it, invested with the character of a national celebration of the Centenary of American Independence, and by the same authority has been so proclaimed and so commended to foreign nations by the President of the United States, and that the maximum amount of capital to be raised was fixed at $10,000,000. It should be considered, too, that the cost of labor and of material is greater in the United States than in Europe. It is submitted, therefore, that the amount to be appropriated by Congress should be proportioned with reference to these facts, and with reference also to the degree of aid which experience has shown to be requisite from the governments under whose auspices the latest and most extensive of such exhibitions have been held. It is the desire of the commission that whatever appropriation is made should be guarded by such wise provisions and administered under such governmental control as will insure its judicious expenditure for the purpose intended.

The recent almost unprecedented depression in manufactures, trade and finance, has interfered with the progress of subscriptions to the stock of the Centennial Board of Finance, and with the payment of instalments due on those already made. This state of affairs affords another imperative reason for such action by Congress as will provide sufficient and timely appropriations to guarantee the success of the national undertaking. Pennsylvania stands pledged by an act of her legislature for one million of dollars, and the city of Philadelphia for a half million, to be expended upon a building to be used by the Commission as a gallery of fine arts, which building will be a very imposing and beautiful addition to the group, and will remain as a perpetual memorial of the occasion. The people of Pennsylvania, in addition to these state and municipal appropriations, have subscribed to the stock of the Centennial Board of Finance about one and a half millions of dollars, which will go into the general fund for the expenses of the work of the Commission as it progresses.

THE SCHOOL-ROOM.

THE GLORY AND SHAME OF TEACHING.—The fallibility of humanity prevents the attainment of perfection by human effort, and noble as is the province of the instructor, yet teaching has both its glory and its shame. If we look at the tasteful and comfortable school-houses which have sprung up all over the land; when we think of the vast amount of costly and useful apparatus which has been placed in the hands of the teacher, enabling the pupil to see "face to face" those great truths which have hitherto been confined to the closet of the student, or the secluded laboratory of the chemist—we may well exclaim with pride that the profession of teaching is making rapid progress. Yes, this is the glory of teaching. These things fill with gratitude the heart of every true friend of education. If we turn to contemplate the other side, we see those in the teachers' ranks who are entirely unworthy of the position they hold; we see intellect wasted through injudicious training; we still behold clumsy and unsightly buildings dignified by the title of school houses; the events of every-day life, which require careful explanation remaining enveloped in darkness, the objects of ignorant wonder or superstitious terror; this is the *shame* of the profession. In view of all this, fellow teachers, let us strive with earnest endeavor to increase the true glory of our profession, feeling that we greatly need both labor and patience; and

> Still achieving, still pursuing,
> Learn to labor and to wait.

E. M'V. MOORE.

WRITTEN EXCUSES.—Our attention was directed to this subject recently by the remark of a teacher. The remark was called forth in a manner similar to this: A young lad, late at school, was asked for his "note" of excuse. He replied that he did not think it was late, and for this reason did not ask for a note on leaving home, but would bring one at noon. The teacher, rather indignant at the simplicity of manner, and modest reply of the pupil, said: "You should have a *supply* of 'excuses,' 'notes' on hand, and then, whenever you are late, you can present one."

The pupil evidently had not been long under the tuition of that teacher, or he would have been prepared for such an emergency.

Written excuses are good in their place, but let them come from the parent or guardian, and explain the cause of the pupil's absence or contain a statement that the child was necessarily detained. When these "excuses" are degraded to the mere formal work of keeping the teacher's report free from "tardy marks," the requirement of them had better be abandoned at once.

If it is not a distinct part of the teacher's work—it is, at least, *a duty* to teach the pupil both by precept and example, to be honest and truthful. But if the teacher encourages the pupil to keep a supply of these "notes," and accepts them on any, and all occasions, he at once teaches him to practice deception, to impose on both parent and teacher, and as a reward of merit for his success therein, he gives him a perfect record for prompt attendance.

This may be a smooth and pleasant path for the teacher, but what of the effect on the *morals* of the school? *

TEACHING, in our early days, was in what might be called the savage state. It was brute force from beginning to end. Children did as they pleased—exercising the privilege of little savages—till they annoyed the big savage who had charge of them; whereupon he went at them—savagely. Like savages, the children were riotous, till they were murdered—then they were quiet for a spell. In that savage state children were whipped for drawing pictures on their slates; were asked questions, when the questioner knew they would lie in their answers, and were then whipped for lying. We are now in the second, or barbarous, stage of educational society. Selfishness is the trait of barbarous people, as cruelty is of savages. We are selfish in our dealings with children; we consider ourselves, not the greatest good of the children. When we find a fault prevailing in our schools, we attack the children and never think to look within ourselves for the cause of it. A teacher punishes a boy from England for dropping his *h's;* another persecutes a child for not going through a devotional exercise which his father and mother have cautioned him to avoid; another sends a child home on a frivolous pretense when the mercury stands at 15° below zero, and when reminded of the intense cold, the teacher says that he supposed it had moderated since the temperature was 70° in his furnace-heated school house. Now all this is not the savage cruelty of the "old masters," but the barbarian indifference of the new. No child should be punished until the teacher ascertains whether there is not something in his own manner to invite or arouse the child's misbehavior; further, no child should be punished until he is examined by a competent physician as to the state of his health. Punishable misconduct is often the result of sickness or feeble-mindedness; and, finally, no child should be punished till the exact nature of his home surroundings is known.

Think of the injustice of punishing a boy for not knowing his lessons, whose father, on the night before, made him put away his books for a game of cards. There is no such thing as a bad child. There are unfortunate children—victims of a foolish mother, or a brutal father, or a hasty, unjust, indifferent teacher. Children are the proudest and most sensitive creatures on the earth. They will die rather than reveal the disadvantages under which they may be laboring, and teachers often mistake for sullenness or laziness, or hatred, what is in truth a sense of shame, 'the modesty of nature." While teachers treat children as if they were little puppets and rag-dolls, teaching will be in the barbarous state.

Teachers who wear glasses have many difficulties to contend against. There is left in children a trace of the savage's contempt for one possessed of a physical defect. This is a vice and should be rooted out. But children are not always positively vicious in the annoyance which they give to the wearers of glasses. To the mind of a Western child, especially if he be of foreign extraction, there is something very comical in the spectacle of a spectacled woman; moreover some persons have a way of looking through their glasses—staring, the boys call it—that makes a foolish child laugh in spite of himself. "I could n't help lauging—she looked at me in such a funny way!" is the only excuse the young culprit has to offer. At certain angles, the eye, through spectacles, has a very peculiar appearance, and as short-sighted persons would claim the sympathy of others, so let them deal charitably with the involuntary offenses given by silly children.—*Chicago Teacher.*

AGASSIZ AS A TEACHER.—Agassiz was a great teacher, as well as a great naturalist. A few of the characteristics which gave him so much success in his profession will here be briefly enumerated that others may be influenced by the example.

Agassiz disliked text-books. Mere book learning he almost despised. He thought those methods of instruction all wrong, which confined little children to the school-room and compelled them to spend years in the study of books, when fresh fields, enticing groves and sparkling streams, full of interesting objects, were to be found all around them. The best text-book, he thought, is nature—nature in all her variety and beauty, second hand teaching is comparatively dull and unproductive. Agassiz himself wrote a text-book on zoology, extensively used by others, but seldom, it is said, by himself. He did not need its help. His mind was full. Reliance upon the book trammeled his expression, and chilled its inspiring effect.

Agassiz loved to associate with his pupils, and could do it without any loss of influence or dignity. This is true of all great teachers. For a shallow, weak man, whose constant effort it is to appear to his pupils what he is not, it is politic not to allow them to come into close contact with him; but any teacher who is fit for his high office, gains by such association. Indeed, we doubt whether any effective teaching, any teaching of a high order—any teaching that tells upon life and character—can be done, unless there be pleasant social relations, a feeling of friendly sympathy, existing between teacher and pupil. In Agassiz his pupils always knew they had a friend. His manner in the lecture room before his class, was that of an

elder brother, and when he took the students with him on an excursion to the country, as he frequently did, he threw off all reserve, and was as merry as the merriest. It was on such occasions, when meeting with some interesting natural object, that his great talent for teaching appeared, to most advantage. He at once forgot himself in his subject, and discoursed upon it with a clearness and fullness and an eloquence that completely captivated his hearers. It was this that made the school on Penikese island last summer almost a Paradise to the student of natural science.

Agassiz was an enthusiast in his profession. His enthusiasm manifested itself equally in imparting as in acquiring knowledge. One would think that a philosopher so deeply versed in natural science could hardly interest himself in explaining the elements to persons to whom the whole subject was unfamiliar. But not so with Agassiz. Whether in the lecture-room before his class, addressing a body of farmers at an agricultural fair or a body of teachers at an institute; or in ordinary conversation with parties calling upon him for any information, he always warmed with his subject and often became wholly absorbed in it. No wonder young men thronged about him eager to become his disciples; no wonder rich men unlocked their coffers and poured into his hand money to fit out costly expeditions to explore distant, unknown regions; no wonder a school of science grew up around him as if by magic on an unpeopled island, or a colossal museum was gathered together by the influence of his name, from the four corners of the earth. Agassiz, "the teacher," had no time to make money. He died possessed only of a library and a mortgaged house and lot. His daughters he could leave nothing, not because he did not love them, but because he had nothing to leave. He left them, however, that which must be to them of incomparably greater value, a name that will be honored during all the ages.

DIRECTORS' COLUMN.

COMPLAINTS are very frequently made by school directors that when they allow the public school buildings to be used for other than school purposes, they are apt to be damaged and left unclean and the furniture and books of the pupils disturbed or injured. Many districts throughout the state, on this account, have been compelled to close the doors of their school houses against outside assemblages of all kinds. The following from the Scranton *Republican* makes public recent proceedings of this kind on the part of the Providence borough (Luzerne county) school board:

Business for which the meeting was called was stated by the chairman, when some discussion ensued, after which the following preamble and resolution was presented and read by Mr. Mulley:

WHEREAS, This Board of Directors having found by experience that the occupancy of our school buildings for any other than purposes directly connected with the education of children as provided by law, is inconsistent with the welfare of our schools, and injurious to the property held by us in trust for the people, although we admit that such joint occupancy of school buildings may be convenient in some not so fully settled portions of the state, we deem it uncalled for and inexpedient in this city; therefore, be it

Resolved, That hereafter, and from this date, permission shall not be given to occupy any school property within this district for any purpose whatsoever, other than the education of the young as provided by law, excepting, however, the Sunday school at Park Place, which may be continued in the school building at that place without further notice.

After due deliberation and a calm and dispassionate consideration of the matter, on motion of Mr. Walsh, the preamble and resolution were unanimously adopted, and the secretary directed to place the same on record, and publish the proceedings of the meeting in the daily papers of this city.

WOMEN AS SCHOOL DIRECTORS.

AS a considerable number of women will take their seats in our school boards on the first Monday of June next, it will be well to inquire what the experience of other states teaches in reference to the fitness of women to fill offices connected with the management of school affairs. We find the following in a recent report of the Rhode Island Board of Education:

It is very important that the schools should have the benefit of the most valuable services that can be found for their supervision and general control, and as the experience of the last thirty years has proved the wisdom of employing a large number of female teachers in the school-room in place of males, the experiment is now undergoing tests whether women may not with equal propriety and efficiency attend to the inspection of our schools as school officers, especially in primary, intermediate and girls' schools. At the outset, women are especially qualified by nature in the motherly instincts of love and tender interest for children, and during the first ten or twelve years of the child's life the mother and teacher have mainly the management and control of his education. It may well be urged that from the first no one can take a deeper interest in all that concerns the welfare and training of the child than the mother, and that whether at home or at school, his physical, intellectual and moral well-being are under her especial guardianship.

How natural that the mother should follow, in heart, the footsteps of her boy or girl from the home to the school, and should feel a jealous interest in the character of her partner and assistant in the education of her child. How natural, too, that her own steps should follow the child's to the school to watch the unfolding of the germs of character under the nurture of the teacher. Now, while we commit the instruction and discipline of child nature to those whose chief qualification is love for, and an adaptation of nature to, the wants of childhood, shall we withhold from official relations to these educational influences the power and influence of one who is nearer and dearer to the child than any other, his mother? Who, better than mothers, understands the physical nature of the child, his weakness and his needs? Who better understands the petty faults of child nature and the kind of training needed to over-

come them? Who has more of that true heart sympathy which can interpret and understand the proper demands of his nature and the means of satisfying them? Who has a more inquiring spirit into the laws that govern health of mind and body and the harmonious development of the powers of the child? Certainly, no one; and, on these grounds, women have a natural fitness to discharge the trusts of oversight from a more thorough insight into the nature, wants and capabilities of childhood.

Added to natural fitness is the valuable experience which so many of our most intelligent and influential women have received in the school-room as teachers. In some states, of which Pennsylvania is an example, no person is eligible to the office of school superintendent unless he or she has had a successful experience in the school-room as a teacher. Such a necessary requirement as experience may well be demanded of our school officers, and in almost every school district in Rhode Island are capable women who have served for one or more years, and have thus learned, in the most practical and satisfactory way, how to make good schools.

To judge of faithful or unsuccessful labor in the school, and to appreciate the difficulties of the service, none are better fitted than the women who have acted as instructors, and have borne the trials of the station which is placed under their oversight?

The advice of women would be of especial value to teachers in matters pertaining to the health as well as the studies of the pupil—a subject so sadly neglected in our school work. This advice would of great importance in the management of girls' schools, when the delicate but vital changes of life require the instruction and cautions which only the prudent woman can give.

A third qualification is the element of time. The great complaint on the part of our school officers, is that they have not the time to visit and examine the schools which the work demands. As the service is for the most part a gratuitous one, and is usually prompted only by philanthropic motives, the people cannot demand nor expect that the schools shall receive the attention which they require from men whose business constantly demands their time and thoughts.

Now, none of the duties of men can so properly or so readily be delegated to women as the care of the schools. By an examination of the registers of our schools throughout the state, it will be found that on an average the names of four women appear to that of one man on the visiting lists, practically showing that women have more interest and time to devote to this matter than men. Of the audiences which gather at the discussion of educational topics, or at teachers' institutes, the female element here predominates, showing the same fact, that women are first in their intelligent inquiries after the best methods of instruction at home and at school. Perhaps the most convincing argument in favor of woman's appointment in official school relations is found in practical experience. In several of the states women hold offices upon school-boards, and this in the most intelligent communities. In several of the towns of Illinois, Massachusetts and other states, women not only occupy the office of school committee and supervisor, with honor and fidelity, but in several instances they occupy the salaried office of superintendent of the schools of the town. So far as the state reports are in evidence, it appears that the work is done faithfully and conscientiously, and merits public approbation. Success proves capacity and fitness.

It has been objected to the appointment of women upon school boards, that they are not familiar with the school laws, and with the business management of these affairs. In answer, we can say that what women do not know of these matters, they could easily and readily learn.

THE MONTH.

LANCASTER city would have received in the past seven years $3,870.95 more state appropriation, in case the directors had concluded to elect a city superintendent of schools. The loss in money, however, is of comparatively small account. The greatest loss to the city is in the efficiency of her school organization.

CLEARFIELD.—The board of School Directors of Huston district, Clearfield county, have taken a step in advance of most other rural districts in the state, by establishing a fine, central graded school. The district is large, the population, composed mostly of New Englanders, is sparse. The people are warm friends of education. Their children are advanced beyond the capacity of the ordinary teacher, and still they must be properly educated at home. Competent teachers cannot be obtained for the ungraded schools; they readily find the places for which they are demanded. The higher branches are to be taught, and how can they be taught satisfactorily in a school poorly classified? Queries like this and many others aroused the Directors, and they acted. Early in the Spring of 1873, the Board resolved to erect a school building in conformity to the demand of the times. It was agreed that the building should not cost more than $10,000, unless actually necessary. Mr. Ale, an architect of considerable experience, was requested to draw up plans. He did so, and his along with others were presented at a subsequent meeting of the Board. Mr. Ale's plans were adopted, and the work commenced. The building stands on a lot 200 feet square, at a distance of one-half mile from the village of Pennfield, and is constructed of wood, main building 52×32, with wings 16×24, two stories high, the lower 14 ft., the upper 15 ft. high. On each floor are two well-planned school-rooms, and two recitation rooms in the wings. The entrances open through the wings, one is designed for the girls, and the other for the boys. All available space is taken up for some purpose. The rooms are heated by means of two large furnaces of the most approved kind. The whole structure is surmounted by a dome containing a fine-toned bell manufactured at Troy, New York. The furniture is that furnished by the well-known firm of J. A. Bancroft & Co., Philadelphia. The High School room is supplied with the single desk and chair, which are undoubtedly well adapted to the wants of the school-room.

The High School already starts out with cheering prospects. The course now pursued embraces several branches of the higher mathematics, natural sciences and language. The school is giving satisfaction, and the people quite generally view the matter with favor. The length of term has been fixed at ten months. This seems to be doubly gratifying for the reason the pupils would be left in idleness while

the school is not in session, or the school would awaken opposition on account of the little progress made in a short term. FREEDOM.

JUNIATA COUNTY.—On Monday afternoon and evening, March 23d, the closing exercises of the Perrysville schools were held in the presence of a large audience. The exercises were of a varied character, interspersed with music, both vocal and instrumental. The hall was beautifully decorated with pictures, wreaths, and other appropriate emblems, conspicuous among which was a tasteful evergreen wreath, five feet in diameter, having within it the word "Wickersham" in the form of an arch. Messrs. Smith and Turbett are to be congratulated for the admirable manner in which they handled the schools during the term just closed, and the district is fortunate in having secured an efficient corps of teachers. Early in the term the board passed a resolution "to visit the schools in a body the first Friday in each month," which was carried out, and found to be productive of good. The County Superintendent, Mr. Robison, was present during the exercises, and expressed himself as highly pleased with the conduct of the scholars. Mr. R. is deeply interested in the cause of education in this locality, and is "the right man in the right place." J. B. T.

OBITUARY.

MARY S. MILLS.

At the first regular meeting of the teachers of the Fourth School District of Scranton, after the death of Miss Mills, the following resolutions were adopted:

WHEREAS, It hath pleased our heavenly Father to remove from our midst, by death, Mary S. Mills, who, for several years, has been our associate and co-laborer; therefore,

Resolved, That as a body of teachers we deeply mourn the loss of one who by her many noble qualities, endeared herself to us—that we will cherish her virtues, endeavor to emulate her example and ever hold her in fond remembrance; although we shall miss her from our frequent gatherings, may we not forget that what is our loss is her gain.

Resolved, That the community has lost a faithful and conscientious teacher, and the pupils a firm friend as well as kind instructor.

Resolved, That we tender to her sorrowing sister and brothers our heartfelt sympathy, and may He "who marketh even the sparrow's fall," comfort them in their bereavement.

Resolved, That these resolutions be published in the Scranton daily papers, the Montrose papers, and *Pennsylvania School Journal*, and that a copy be sent to the family of the deceased.

COMMITTEE: S. A. Collins, A. Williams, M. Sherer, E. J. Chase, L. E. Penman.

OFFICIAL DEPARTMENT.

DEPARTMENT OF COMMON SCHOOLS,
HARRISBURG, May, 1874.

DISTRICT REPORTS AND CERTIFICATES.

A COPY of the blanks required for annual district reports and certificates is mailed to every secretary in the state, and, as they differ from those of past years, *no others should be used*. As soon as the school-term has closed, all boards of directors now in office should make out their annual reports, and have them ready to hand over to their successors as soon as the new boards shall have organized. It will be one of the first duties of the officers of the new boards to sign and transmit them to the proper superintendent. All should be forwarded in June. Districts will be paid in the order in which reports are received.

SUPERINTENDENTS' ANNUAL REPORTS.

THE written reports of superintendents for the year 1874 will be limited to *three* pages of the printed state report. Within that space it is thought each superintendent can compress an account sufficiently full of the educational progress made in his county, city or borough during the year, and indicate the educational work still remaining undone. All preliminaries, generalities and long descriptions may be dispensed with, and the reports take the form of a few comprehensive, pointed paragraphs, giving only such facts and making only such suggestions concerning school affairs as will be of interest to all friends of education.

The statistical report should be made as complete as possible. Every item called for should be given. If not satisfactory in this respect, they will be returned. The facts stated in the statistical report should not be repeated in the written report.

All superintendents' reports should be on file in this department by the fifteenth of July.

NORMAL SCHOOL EXAMINATIONS.

THE annual examinations at the several State Normal Schools will take place as follows:

Kutztown.—Commence at 1 p. m., on Tuesday, May 19th.

West Chester.—Commence at 1 p. m., on Tuesday, June 9th.

Shippensburg.—Commence at 9 a. m., on Thursday, June 11th.

Mansfield.—Commence at 8 a. m., on Tuesday, June 16th.

Edinboro.—Commence at 1 p. m., on Thursday, June 18th.

Bloomsburg.—Commence at 8 a. m., on Thursday, June 25th.

Millersville.—Commence at 8 a. m. on Tuesday, June 30th.

The board of examiners at Kutztown, will consist of the State Superintendent or Deputy, Principals Maris and Horne, and Superintendents Newlin and Severn.

The board of examiners at West Chester will consist of the State Superintendent or Deputy, Principals Brooks and Maris, and Superintendents Baker and Eastburn.

The board of examiners at Shippensburg will consist of the State Superintendent or Deputy, Principals Horne and Beard, and Superintendents Fisher and McNeal.

The board of examiners at Mansfield, will consist of the State Superintendent or Deputy, Principals Griswold and Fradenburg and Superintendents Horton, of Williamsport, and Keeney.

The board of examiners at Edinboro will consist of the State Superintendent or Deputy, Principals Fradenburg and Cooper, and Superintendents Jones and Bosley.

The board of examiners at Bloomsburg will consist of the State Superintendent or Deputy, Princi-

pals Beard and Griswold, and Superintendents Ingram and Noetling.

The board of examiners at Millersville will consist of State Superintendent or Deputy, Principals Cooper and Brooks, and Superintendents Shelly and Shaub.

All the Superintendents of the several Normal School Districts are official visitors under the law, and should be present at the proper examination to witness and give advice concerning the proceedings.

The expenses of the members of the boards of examiners will be paid by the State. No one appointed as member of a board can be absent without securing the services of another person of the same class to take the place of his own.

A student must receive four affirmative votes out of five, in order to graduate.

The following rules concerning the examinations will be in force:

1. The classes, especially when large, shall be broken up into sections, and each section be examined by itself.

2. The examinations shall be strictly private, no persons being admitted except the members of the Faculty, the Board of Trustees, and invited guests.

3. The voting shall be done by ballot.

4. The result of examination shall be announced to the class by the President of the Board.

PERMANENT CERTIFICATES GRANTED.

NO.	NAME.	RESIDENCE.
1190	Mary B. Kingerle....	Allegheny City, Alleg'y co.
1191	Bella Hunter.....	" " " "
1192	Susan E. Hunter....	" " " "
1193	Tillie Jamison.....	" " " "
1194	Lizzie M'Clymonds.	" " " "
1196	Jennie Orr.....	" " " "
1197	Mary E. Hamilton...	" " " "
1198	Jennie Knott.....	New Brighton, Beaver "
1199	Miss M. L. Platt.....	" " " "
1100	Sarah A. Nickum.....	Freedom, " "
1101	Robert B. Carroll...	Creekside, Indiana, "
1102	Miss M. J. Reed.....	Clarksburgh, " "
1103	H. B. Zimmerman...	Newport, Perry "
1104	William E. Baker...	Eschol, " "
1105	John B. Spangler....	Myerstown, Lebanon "
1106	Miss L. G. Evans...	Selinsgrove, Snyder "
1107	Wm. Swanson.....	Sugar Grove, Warren "
1108	Miss Amanda Leary	Cumberl'd Valley, Bedf'd
1109	J. Elliott Ross	St. Clair, Schuylkill, "

UNIFORMITY OF TEXT-BOOKS.

THE following bill is now pending in the Legislature. All interested should at once make their wishes concerning its passage known to their immediate representatives. Our own views in opposition to all such schemes have been frequently expressed and need not be repeated. A similar bill is pending in the Legislature of Ohio.

AN ACT

to erect a commission for the purpose of examining and procuring uniformity in school books for the several school districts of this Commonwealth, and for the purchase of the copyrights thereof.

Sec. 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same,* That it shall be the duty of the Governor of the Commonwealth to nominate, and by and with the advice and consent of the Senate to appoint four discreet and intelligent citizens, who together with the State Superintendent of Common Schools, shall constitute a commission for the purpose of examining and selecting text-books to be used in the common schools of this state.

Sec. 2 The said commission shall meet in the city of Harrisburg on a day to be appointed by the Governor, not later than the first day of November one thousand eight hundred and seventy-four, and shall organize by electing one of their number as president and another as secretary.

Sec. 3. The said commission after a thorough and careful examination of the different text-books used in the common schools in this Commonwealth, or prepared and offered for use by authors or publishers, shall select and agree upon series of text-books for the use of the common schools throughout the state; said series to include every branch of study authorized to be taught in any public school of the Commonwealth. The commission shall agree upon each work of the school series separately and upon its own merits, and no book shall be held to be chosen which fails to receive the affirmative vote of a majority of the commission, *Provided,* That if the commission are unable to agree upon or approve of any particular part of the series from books already published, they shall prepare books to complete the series.

Sec. 4. Before completing the selection of text-books, the commission shall ascertain at what price the copyrights of the various publications can be obtained for the state of Pennsylvania, also, at what price responsible publishing houses would undertake to supply the demand of the various public schools of the state, without the purchase of copyright, for a term of five years, and report the same to the Governor together with a concise account of the transactions of commission for his approval.

Sec. 5. If the Governor, in conjunction with the said commission, shall deem it to the best interests of the people of the Commonwealth, they are hereby authorized to purchase the copyright or copyrights of such text-books as agreed upon for the use of the State, and, when the same is secured, they shall be subject to use by any and all publishers within the Commonwealth desiring the same, subject however to such regulations and limitations as the said commission may prescribe. *Provided,* That in the event of non purchase of copyright, as aforesaid, it shall be unlawful for the publishers or others to charge and collect a greater sum per book than that set forth to the commission previous to the completion of the series, without, however, first obtaining the consent of the commission aforesaid thereto.

Sec. 6. The uniform series of text-books agreed upon by the Governor shall be adopted and used in all the public schools of the Commonwealth for the term of five years from and after the first day of September Anno Domini one thousand eight hundred and seventy-five, and the Department of Public Instruction is hereby authorized to take proper measures for the enforcement of this provision.

Sec. 7. The said commissioners shall receive as compensation for their services the sum of ten dollars per day for each and every day while employed in the discharge of the duties enjoined by this act, *Provided,* That the total compensation of each commissioner shall not exceed three hundred dollars per annum.

COMPULSORY EDUCATION.

THE following bill to secure the attendance of children at school was prepared by Mr. Oliver, chairman of the Committee on Education, in the House of Representatives, It received on the question of its final passage, an unexpectedly large vote, but was defeated. Mr. Oliver made an able speech in its favor which we hope to publish.

AN ACT

to secure the attendance of children at school.

Sec. 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same,* That every parent, guardian or other person having control of any child between the ages of eight and fourteen years, residing in any school district in which a school is taught for three months or more annually, within one mile by the nearest traveled road of the residence of such child, shall instruct or cause such child to be instructed in reading, writing, geography and arithmetic; and every person having such control of any child shall cause such child to attend some school at least twelve weeks in each year, eight weeks of which at least shall be consecutive, or shall cause such child to be instructed at home or elsewhere at least twelve weeks in each year, in the branches above named, unless the physical or mental condition of the child is such as to render such attendance unfit or impracticable, or unless the child shall be reasonably proficient in said branches.

Sec. 2. It shall be the duty of the school directors or controllers having control of any school, to prosecute for all violations of section one of this act in their district; and any person who shall violate said section one, shall be punished by a fine of not less than fifty cents and not more than five dollars, payable into the school treasury of the district in which he resides, for every week not exceeding twelve weeks in any one year, during which he shall have failed to comply with the provisions of said section said fine when recovered to be paid into the school treasury of the district where the penalty or fine was first incurred.

Sec. 3. The school directors or controllers having control of any school where a written notice has been served by any tax-payer upon any two or more of them, stating by whom, when and how any such penalty has been incurred, who shall neglect for ten days after the service of such notice upon them to institute a suit for the recovery thereof, unless such penalty shall sooner be paid without suit or unless upon investigation during that time they shall be satisfied that no penalty has actually been incurred, shall forfeit and pay the sum of not less than five dollars nor more than fifteen dollars for each neglect, to be recovered as may hereafter be provided in any court of competent jurisdiction, such penalty when recovered to be paid to the school treasurer for the use of the district in which the penalty was incurred.

Sec. 4. It shall be the duty of the directors or controllers having the charge of any school, upon application, to furnish any child between the ages of eight and fourteen years of age residing in their district, with the necessary books, when it shall appear that the parent or other person having control of said child is in indigent circumstances and is desirous of sending such child to school, and such books shall be paid from the treasury of the school district by orders drawn thereupon by the proper officers.

Sec. 5. The directors or controllers having charge or control of any public school shall render annually a report to the county superintendent, showing the number and result of prosecutions under this act, the number of children, if any, between the ages of eight and fourteen years of age who have not attended any school or who have not been instructed in accordance with section one of this act.

Sec. 6. All suits under this act shall be an action of debt in the name of the people of the State of Pennsylvania and for the use of the district where the offence shall have been committed.

BOOK NOTICES.

EASY LESSONS IN NATURAL SCIENCE: *Embracing a General Outline of the Physical Constitution and Phenomena of the World, and an account of the most important and interesting Animals, Vegetables and Minerals. With illustrations. Designed for Schools and Families. By R. E. Kremer, Author of "Bible Gems." Philadelphia: Claxton, Remsen & Haffelfinger.* 1874. *Price* $1 75.

The special object of this book is well expressed in the words of the preface: "That a growing interest has been manifesting itself of late years in favor of the more extensive introduction of physical science into our public and select schools must be gratifying to all true friends of education. Heretofore these useful and interesting studies were almost entirely confined to high schools, academies and colleges. The majority of children never entering these advanced schools, remained, for the most part, ignorant of the first principles of natural science. Now, however, there is a waking up in regard to this branch of education. Many of our best educators are earnestly advocating its introduction into all our schools as soon as sufficiently advanced to understand its plainest principles. This felt want calls for suitable elementary works on science. The more extensive and elaborate works already before the public, however excellent for advanced pupils, are not adapted to the want in question. We need science *simplified*. To render some service in this department is the object of this manual. No claim is made to new ideas or theories. What was found necessary was to select, simplify and arrange from the abundant matter already at hand."

Miss Kremer is neither misinformed as to the want of a more extensive introduction of the study of natural science in our elementary schools, nor mistaken as to the means of supplying it. We must have suitable text-books on the subject, and her effort to furnish one is certainly praiseworthy. She has brought together and arranged in lessons interesting matter belonging to nearly all the natural sciences. Facts are strewn along much as an observing child meets with them in nature. Nor are the perceptive powers the only ones called into requisition in the preparation of the lessons. Definitions and reasons

appeal to the judgment, and in the hands of a competent teacher, the whole mind may receive due culture. The book should have a large sale. W.

NEW NORMAL MENTAL ARITHMETIC: *A Thorough and Complete Course, by Analysis and Induction. By Edward Brooks, A. M., Author of Mathematical Series. Pp.:* 176. *Phila.: Sower, Potts & Co.*

"Brooks" heads the list of Mental Arithmetics. His first venture in this direction, some fifteen years ago, was in advance of anything of its kind then before the public; and the "Normal Mental" was soon afloat on the top wave of a rising tide that has not yet reached "high-water mark." The present text-book, while retaining the spirit and general features of its predecessor, has its problems better graded and contains fuller treatment of certain topics. It is divided into eight sections, among which are a full and logical treatment of fractions by analysis and induction, of denominate numbers, proportion by analysis, percentage and interest by analysis, etc. The last section contains numerous miscellaneous problems, old and new, which, until the introduction of arithmetical analysis, were solved only by algebra. Popularity may sometimes be regarded a test of merit, and it is gratifying to know that nearly 25,000 copies of this book have been sold since its publication a few months ago.

MONTEITH'S PHYSICAL GEOGRAPHY. *Geography Taught as a Science. Written and Illustrated on the Plan of Object Teaching. By James Monteith, author of School Geographies, etc. Pp.:* 54. *New York: A. S. Barnes & Co. Philadelphia: A. P. Flint, Gen'l Agent.* 1874.

Of course, it's the same old Earth, with its varied life, its solid land, its rolling waters, ocean of air above and sea of fire beneath, that our well-known geographer describes for the pupil. "The world was made for man," is, practically, the author's text; and the Creative Wisdom, which has so adapted all means to this end, may be a leading thought impressed by the devout teacher at every page. Suggestive illustration and familiar language aid the pupil everywhere. Volcanic action, for example, is represented by a cake bursting at the top, boiling springs by the tea kettle, etc. The book also contains numerous striking wood-cuts and good physical maps.

LYMAN'S HISTORICAL CHART. *Containing the Prominent Events of the Civil, Religious and Literary History of the World from the Earliest Times to the Present Day. By Azel S. Lyman. Revised, Enlarged and Improved. National Publishing Company. Philadelphia: Jones Brothers & Co.*

QUESTIONS: *Designed for the Use of those Engaged in the Study of Lyman's Historical Chart.*

"Life bears us on like the current of a mighty river." With change of a word or two, the author catches the spirit of Bishop Heber's noble sentence and takes in the full sweep of this majestic River of Time. He floats onward with the student upon its broad flood, growing broader as it rolls. As they come into view, are close at hand, or fade away in the distance, he points out the landmarks of the ages, his horizon ever bounding its hundred years of brief historic fact. Cotemporary history is *the* feature of this most valuable Chart. When the history of this or that nation is read with care, we get it, in a degree apart from all others. Who thinks of the Prophet Elijah as cotemporary with Queen Dido and Lycurgus the Spartan? of Romulus and Isaiah as cotemporaries? of Ezekiel as cotemporary with Æsop and Solon? of Daniel with Pythagoras and Tarquin the Proud? of Cincinnatus, Herodotus and Socrates with Malachi and Nehemiah? of Euclid as cotemporary with Demosthenes? or Tamerlane with Wickliffe and Chaucer? or the Maccabees with the Third Punic War? With this before him the student may take, as it were, a bird's-eye view of any era of history, revealed, traditional or authentic. The chart is a well-bound quarto, in the shape of a large atlas, perhaps eighteen inches square, and the "stream" runs on through some twenty or more pages. It is the most satisfactory aid to the teaching of universal history that we have ever seen, and will commend itself at a glance to teacher or student. For further description the reader is referred to our advertising pages.

SWINTON'S LANGUAGE LESSONS: *An Introductory Grammar and Composition for Intermediate and Grammar Grades. By William Swinton, A. M., University of California. Pp.:* 176. *New York: Harper & Brothers.* 1874.

Mr. Swinton proposes to write a series of four manuals for school use on the study of Language. These will be, the Language Primer, Language Lessons, School Composition and Progressive Grammar. That under notice is No. 2 of the series. It introduces the pupil to words and their uses with but little in the way of technical grammar. As the author remarks, "The exercises are the book," and "the bristling array of classifications, nomenclatures and paradigms has been wholly discarded." Teachers who find grammar a drag—and their name is legion—would do well to see the Language Lessons.

A PRACTICAL COURSE WITH THE FRENCH LANGUAGE. *On Woodbury's Plan with German. By Louis A. Languellier, LL.D., College City of New York, and H. M Monsanto, U. S Naval Academy. Pp.:* 530. *New York: Ivison, Blakeman Taylor & Co.*

This book presents the study of French on a plan similar to that of the ordinary grammar, but with full and well-chosen vocabularies and exercises arranged in an open page, and combining the excellent features of the Ollendorf method of study in foreign languages. The arrangement and treatment of the verb is exceptionally good, the last lesson containing all the irregular verbs in general use given in alphabetical order. A history of the formation of the French language with the English translation, with a dictionary of all the French words used in the work, is found at the end of the Lessons.

WARREN'S BRIEF COURSE IN GEOGRAPHY. *Quarto. Pp.:* 91. *Philadelphia: Cowperthwait & Co.* 1874.

The general plan of Warren's Common School Geography is followed, but with less of detail, more prominence being everywhere given to leading facts. The maps are designed for school use, not for general reference; none but the leading towns and most important features are noted, and whatever is found here is referred to either in the text or questions. The illustrations are from original designs, happily chosen and executed by the best artists. The Apgar system of map-drawing is fully presented in several pages at the close of the book. The physical features of every country are presented briefly and so classified as to be the more readily recalled by the pupil. The book is issued in the excellent style of all the publications of this house, the good judgment and rare good taste of our friend, Mr. D. S. Stone, of the firm of Cowperthwait & Co., being manifest in its general get-up as well as in its mechanical execution.

MISCELLANY.

IT was not an accident I think that the world was made as it was. I am one of those who believe that God did what he meant to do when he made this world. If there is anything that we can learn from nature, it is that men, being born into this world, unfold gradually through an increasing knowledge of laws and learn to obey those laws, little by little, because that is the way in which God thought it best they should be evolved and developed. When we say that all men are sinful, we speak in the line of the world's experience. All departments of society must adapt themselves to these two great facts: first, that there is universal imperfection, or sinfulness—if that name be preferred; and, secondly, that there is no getting on except by a kindly nourishing, benevolent toleration of this imperfection, until persons have had time to grow out of it. It is right here, I think, that Christ reveals God's true moral government. There is something in Him and what He taught that meets this universal condition. Then love towards that bright centre! Let hope fly thitherward. Do not deny your inward want. Do not let your condemnation of yourself cease; but let not conscience become your depot. Hope and strive; *hope and strive;* and however much you have gained, when the time for dismission comes, look not to see how good you are, nor how perfect you are, but to see how bountiful God is Measure not yourself. Measure that Heart: measure that Love.—*Beecher.*

A WRITER in the *Overland Monthly*, discussing the "forces of culture," says: "If we should divide culture into a dozen eras instead of only into the stone, bronze, and iron ages, we should have to designate nearly all of them from industrial events. The sailing vessel, the mould-board, which turns over the furrow of the plough. the water wheel, the magnetic needle, gunpowder, the paper mill, movable type, the spinning wheel, the telescope, the microscope, the quadrant, the chronometer, the steam engine, the steamboat, the steam railroad, the steam blast in smelting furnaces, the puddling furnace, the rolling mill, and labor saving machinery of a thousand kinds—these are triumphs of industry, and the main causes of the superiority of modern over ancient civilization. It is the working man, not the soldier, the priest, the statesman, the philosopher, the scientist, the artist, nor the author, who has given us not only the foundation, but also most of the superstructure, of our culture."

A correspondent of a Boston paper, now among the lakes of Maine, writes that he asked a boy which was the best of several small lakes for fishing. The boy answered, "Lake Pissaquattisaquaquapassamoquiddynixcum—" At this point the correspondent walked away, reached a neighboring lake, fished awhile, went home to dinner, looked over the papers, took a nap, wrote two letters, and started out to fish again. On the way he met the boy where he had left him, still looking on the ground, and just finishing the name—"oloosikuhugennisnuggi." The writer dates his letter, "Lake Munkatunkcobogsquroitakooloonatic."

Thirty pupils of a ladies' school in New York have made arrangements to go on a European tour, under charge of their teachers, this summer.

There are said to be twenty counties in the State which are completely clear of debt. These are Berks, Bedford, Bucks, Centre, Clinton, Columbia, Fulton, Greene, Huntingdon, Juniata, Lehigh, McKean, Northumberland, Snyder, Somerset, Sullivan, Union, Warren, Wayne and York.

A company has been soliciting permission of the Turkish goverment to dredge the port of Rhodes, to recover the bronze guns and other things said to have been thrown into the water at the time of the famous struggle between the knights of St. John and the Turks under Solyman

It is stated that within the past forty-two years there have been 280 fishing vessels and 1,265 lives lost on the various fishing banks outlying our coasts. Nearly the whole of these vessels were lost by being run down by ships and steamers in the fogs which prevail almost constantly in the latitude of the banks.

"Let go that jib—let go that jib, quick!" shouted the captain of a down east sloop to a raw hand in a squall. "I ain't touchin' yer old jib," replied Jonathan, indignantly, as he jammed his fists deeper into his pockets.

Passengers to the Pacific by rail breakfast in the Sierras with twenty feet of snow around them; four hours later they find wheat four inches high, and the next day see pear and peach trees in blossom.

A railroad is to be constructed from the base of Mount Vesuvius to the edge of the crater. It is to be worked by ropes.

A Richmond paper thinks that the moving of the mountains in North Carolina must be owing to the increase of faith in that region.

An application from Strasburg, Germany, was lately received in Chicago for a copy of the regulations of the Young Men's Christian Association of that city.

An Indianapolis man laid a wager with a young lady that she could not pass a week without speaking. The lady won.

North Carolina tries to tempt emigration by the statement that a home in its pine woods is a sure cure for consumption.

A perfectly tame zebra, which will allow persons to ride on its back, is among the attractions of the Paris Zoological Society.

It is estimated that 100,000 acres of land in New Jersey were last year burned over from sparks from passing locomotives.

Switzerland, with 400,000 school children, has 7,000 schools and 6,600 masters. In some districts a master has charge of two schools.

An English lady has promised $25,000 for the purpose of supplying Jerusalem with water.

Amnesty to political offenders was an act of the Czar of Russia on the recent marriage of his daughter.

The Cincinnati *Times* thinks the two great evils of the day are costly funerals and intoxication.

Lancaster claims the honor of having naturalized the first Chinaman as long ago as September, 1860.

Massachusetts thinks of taking a new survey of its territory. The last was made over forty years ago.

Texas thinks she can supply all the salt needed in the country.

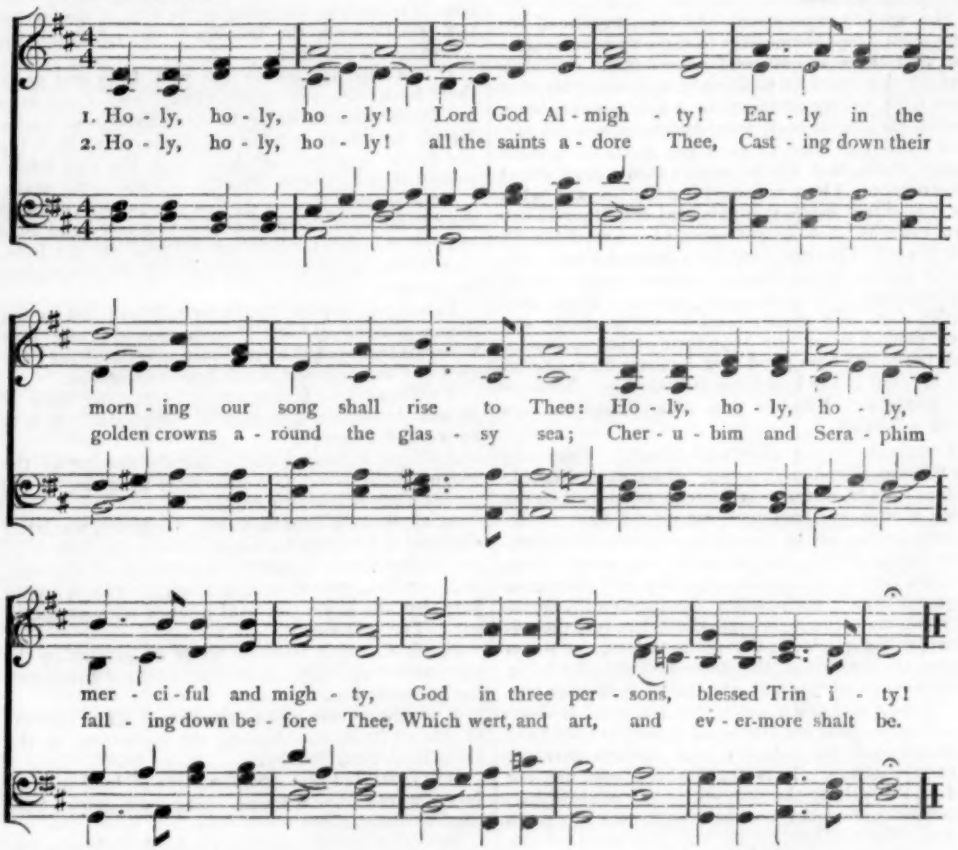
California has eight woolen mills and Oregon two.

Production of coal on the Pacific coast increases.

France is importing vine slips from Missouri.

SOME HINTS.—To give power, smoothness, and flexibility to the voice, nothing is better than daily practice on the scale and short exercises in vocalizing, which is adapting vowels to musical sounds. This should always be preceded by a breathing exercise, the breath being detained in the lungs until it is needed in singing. This also gives neatness and accuracy. Children, like older people, have a tendency to fall into a lazy, slovenly habit of sliding from one tone to the next. Before teaching singing by note, it is advisable to teach a good many little songs by rote, in order to bring the children's voices into unison. Some professors of music assert that all songs should be learned in this way before the syllables or scale names are applied; but owing to the fact that our experience has taught us to the contrary, we are presumptious enough to differ with them The reason is obvious. Each sound is represented by a single character, while, when words are applied *several* sounds are often represented by a *single syllable* Singing by note is to music what phonic spelling is to reading. Singing by note is not learned so rapidly when the practice mostly consists of songs, as when the teacher calls for tones not associated with any tune. A child may learn to sing a tune by note, just as he learns a sentence by hearing it read; he may or may not be familiar with the words which compose it. So he may learn a tune perfectly, and still be unable to give a *single, separate* sound in it. I would make this emphatic: there should be a great deal of practice in skipping as rapidly as possible from one note to another. Beating time is of the greatest importance and should be mechanical. The child must have something tangible to guide him Two part time is the simplest and can be accurately beat by the youngest child in our public schools. This can be followed by three-part, four-part, and six-part time. To make independent singers, the teacher should not sing with her pupils more than is necessary. As soon as practicable there may be singing in two parts.—***Ex.***

NICÆA.

J. E. DYKES.—ENGLISH.
Words by HEBER.

1. Ho - ly, ho - ly, ho - ly! Lord God Al - migh - ty! Ear - ly in the
2. Ho - ly, ho - ly, ho - ly! all the saints a - dore Thee, Cast - ing down their
morn - ing our song shall rise to Thee: Ho - ly, ho - ly, ho - ly,
golden crowns a - round the glas - sy sea; Cher - u - bim and Sera - phim
mer - ci - ful and migh - ty, God in three per - sons, blessed Trin i - ty!
fall - ing down be - fore Thee, Which wert, and art, and ev - er-more shalt be.

Holy, holy, holy! though the darkness hide Thee,
Though the eye of sinful man Thy glory may not see,
Only Thou art holy! there is none beside Thee
Perfect in power, in love, and purity.

Holy, holy, holy! Lord God Almighty!
All Thy works shall praise Thy name in earth, and sky, and sea.
Holy, holy, holy! merciful and mighty;
God in three persons, blessed Trinity!

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